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Original Articles

NOTES ON THE HISTORY OF CLINICAL THERMOMETRY

By Hugh H. Smith, M.D., M.P.H.

Tucson, Arizona

(Continued from the Sept. '57 issue, *Arizona Medicine*.)

NOTHING had been done in clinical thermometry during the century since Sanctorius until Boerhaave made some sporadic use of Fahrenheit's thermometers in his Leyden clinic. Hermann Boerhaave was the first great bedside teacher of clinical medicine, and a man of wide culture. His genius so raised the fame of the University of Leyden, especially as a school of medicine, that it attracted outstanding students from all parts of Europe. Among these were Gerhard van Swieten (1700-1772) and Anton de Haen (1704-1776), founders of the Old Vienna School of Medicine. Both used Fahrenheit's thermometer, but de Haen seems to have been far more impressed by the usefulness of this new tool. In his 15-volume treatise on hospital therapeutics, "Ratio Medendi", which appeared from 1758-1769, are scattered numerous observations on clinical thermometry. He noted among other things: (1) the morning fall and evening rise of temperature in fever patients; (2) the elevation of temperature in the algid stage of chills; and (3) the therapeutic indications in temperature changes and the recognition of a return to normal temperature as indicating convalescence(11).

These observations exerted no influence upon

his contemporaries. His new doctrines were soon forgotten. It is left for us to recognize the value of his labors and to see how far he was in advance of his age.

The long delay in recognizing the value of the thermometer in clinical medicine is explained by the mistaken concepts of disease that prevailed. The dogma of Innate Heat coming from Aristotle and accepted by Galen governed the thinking of medical men until well into the 17th century. According to this hypothesis, the heart is the heat center of the animal system. Respiration was regarded as a cooling process. Even after Harvey discovered the circulation of the blood, he could not understand why the blood should have to flow around the body so rapidly. The aphorisms of Hippocrates, the dogmatisms of Galen, and the canons of Avicenna formed the basis of medical teaching.

Osler(12) sums up the state of medicine shortly after the first introduction of the thermometer into clinical use, as follows: "The middle of the 17th century saw the profession thus far on its way — certain objectives features of disease were known, the art of careful observation had been cultivated, many empirical reme-

dies had been discovered, the coarser structure of man's body had been well worked out, and a good beginning had been made in the knowledge of how the machinery worked — nothing more. What disease really was, where it was, how it was caused, had not even begun to be discussed intelligently."

The growing body of knowledge in physics and chemistry led to attempts to devise systems of medicine based on these new concepts. To quote Osler again, "the profession was literally ravaged by theories, schools and systems, iatromechanics, iatrocumistry, humorism, the animism of Stahl, the vitalistic doctrines of van Helmont and his followers."

According to the chemists, all phenomena of life, both in health and disease, could be explained by chemical ferments contained in fluids of the body. In their thinking, diseases resulted from acrid alkalinity or acidity of the humors, with the morbid causes simply increasing the alkalinity or acidity in various ways. Others tried to explain life and disease by means of mechanical theories. Locomotion, respiration and digestion (the grinding and crushing action of the stomach) were treated as purely mechanical processes.

In Scotland, George Martine of St. Andrews, educated in medicine in Edinburgh and Leyden, published in 1740 a little book of "Essays Medical and Philosophical" (5). Weir Mitchell describes this volume as "one of those notable little essays which ought to have had an immense influence." These essays already cited on the historical side of thermometry, show Martine to be remarkably ahead of his time in his concepts of body heat. He expresses the view that heat in man varies in degree and not in kind. The doctrine of specific heat, which held that each disease had its own kind of fever, had a tremendous hold on medical minds. In expressing such advanced views on the nonspecificity of heat, Martine paid full credit to a remarkable Spanish physician of the early 16th century, Gomez Pereira (ca. 1500-?), who had shown great independence of spirit in combating all forms of authoritarianism and placed his trust on experience. He objected strongly to accepting the work of Galen as final in medicine and

taught that fever differs not in kind from natural body heat, but only in intensity.

Martine makes fun of those who gravely speak of the liver burning up the bile and of the heart burning the hand of those who touch it like a red-hot poker, or of the stomach boiling food like a kettle. He fortifies his conclusions with many observations with the thermometer on men and animals and shuns "the slippery and enchanted ground of unfounded theory." As with de Haen, this looks like the beginning of a practical use of the thermometer in medicine. The germ of real clinical thermometry is in some of his sentences. But again it falls into disuse, while medicine awaited for better understanding of the nature of disease.

About 1750 Benjamin Franklin (1706-1790) wrote that although temperature of the air was 100°, his own body was 96°, proving to him that warm-blooded animals had the power of maintaining a fixed temperature (13).

A French physician, Dr. Ballay, began in 1762 to measure the temperature in disease with a thermometer by determining the temperature of freshly-voided urine (13).

The true rate of advance in medicine is, however, not to be measured by the work of single men, but by the practical capacity of the mass. How useful, how simple it seems to count the pulse and respiration or to put a thermometer under the tongue, and yet it took in one case a century, and in another far more before "the mass of the profession learned to profit by the wisdom of the few." There is a certain sadness in these stories of the failure of long-neglected inventions or discoveries to make on their time any permanent impression of their real usefulness. Weir Mitchell in his picturesque language states, "I have seen how strong was the resuscitative force which now and then existed in some little essay long neglected, how from it, as from seed, arose in after years a fresh growth of vitalizing thought, and how this story repeats itself over and over, until at last, what one knew and valued becomes the riches of all." (1)

Steady progress in all branches of science, especially physiology and chemistry and finally pathology, slowly began to bring sanity into medical practice. One of the men most respon-

sible for bringing a better understanding of disease was Giovanni Battista Morgagni (1682-1771). In the words of Osler, "Into this metaphysical confusion Morgagni came like an old Greek with his clear observation, sensible thinking, and ripe scholarship. Upon this solid foundation the morbid anatomy of modern clinical medicine was built."(12)

Priestley and Lavoisier brought the "pathetic search for oxygen" to its triumphant achievement in 1771. Then followed the publication by Lavoisier and La Place ascribing the cause of animal heat to the chemical combination of oxygen, carbon and hydrogen in the lungs. Thus the doctrine of innate and of specific heats received their death blow and the seat of warmth was placed in the lungs. Gradually the physiology of respiration and of metabolism became clearer over the next few decades as exact biochemical and physiological methods were evolved by Liebig, Rubner, and a host of others.

Before proceeding to the climax of the story, it is well to call attention to a work that appeared at the close of the 18th century which was singularly free from mere theories and, in the highest sense of the term, practical. This was the "Medical Reports" of James Currie (1756-1805), a noted practitioner of Liverpool. For the first time since de Haen and Martine, temperature observations were used for medical purposes, especially for the therapeutic indications they afforded. Currie strongly advocated cold baths in the treatment of fevers. He used the thermometer to establish carefully the time of applying the bath and to regulate its duration. In fact, thermometry pervades the whole of Currie's practice. He discarded the language of theory and speaks with the clear phraseology of a careful experimenter. His writings are described by Weir Mitchell(1) as a work of absolute genius. His theories are so far ahead of his times that his German translator points them out as a "glaring example of the miserable state of medicine in England."

An Englishman, William Arnold, M.D., settled in Jamaica in 1815, and in 1840 published a book entitled "A Practical Treatise on Bilious Remittent Fever, Its Cause and Effects, etc., in which he gives temperature records taken in 1824. He states that temperature records were

taken of every class of residents in health and in disease. Dr. Arnold says, "I believe there is no study more calculated to improve the healing art, or to throw more light on the nature of febrile diseases, than a minute attention to the state of the temperature of the system."(13)

The next great impetus to clinical medicine came from France. The aim of the Paris School was not merely to discover new signs of disease, but to correlate them with the bodily lesions underlying them as these were revealed at autopsy.(14). Thus the notion of specific disease categories was born. A period of great intellectual activity followed upon the development of this new approach, and no greater revolution in medicine has ever occurred than that which marked the opening quarter of the 19th century.

In 1835, two French research men, Antoine Becquerel (1788-1878) and Gilbert Breschet (1784-1845), published results of studies on human temperatures obtained by means of a sensitive thermo-electric apparatus. They established that the mean temperature in health is 37° C. or 98.6° F.(15)

During this time of towering clinicians, Chomel, Bichat, Broussais, Louis and Laennec, attention to thermometry was sporadic, but as knowledge of disease entities became more precise, its value was more apparent. Gabriel Andral (1797-1876), one of the leading clinical teachers of his times, recognized about 1840 the value of the thermometer at the bedside, and he alone since the time of Currie perceived that amid all the apparent uncertainty of the fluctuations of temperature in disease, there was a reign of law.

Physiological studies multiplied and the list of investigators contains the distinguished names of Flourens, Magendie, Helmholtz, and Donders. From the foremost chemistry laboratory of the time, Justus von Liebig (1803-1873) taught that the heat of the body is the result of the processes of combustion and oxidation performed within the organism. "The foundations laid by Lavoisier received from Liebig an extended and well-proportioned superstructure."(16)

Zimmerman, a military surgeon in Hamm, is

accorded credit for having duly estimated the value of thermometry at a time when it was generally neglected. He published papers of value over a period of years(16). It was not until papers by Ludwig Traube (1818-1876) and Friedrich von Barenprung reporting their extensive observations were published in 1850 and 1851 respectively that real attention began to be paid to the possibilities of the thermometer as a diagnostic aid(16); but it was left for Traube's pupil, Carl Wunderlich (1815-1877) professor of medicine at Leipzig, "not only to establish this branch of investigation for the first time upon a deep and lasting basis, but also to build up a very great part of the edifice, and to point out with clearness the directions in which future labor must be applied."(18)

Beginning the use of the thermometer in his clinic and private practice at the mid-point of the century, Wunderlich carried out millions of temperature determinations on thousands of patients over a period of some 16 years before the writing of his book, a permanent medical classic. "The Course of the Temperature in Diseases; A Guide to Clinical Thermometry" appeared in 1868 and since that time the use of the thermometer in medicine has been firmly established. Wunderlich stated his purpose clearly: "Conviction of the immeasurable and heretofore unanticipated practical value of thermometry became immovably fixed in my mind, and it became the object of my endeavors to awaken and establish this conviction in the minds of others."

For his studies, Wunderlich used a mercury thermometer with a Centigrade scale. The axilla was the universal place of application of the instrument, the closed fist being regarded as unreliable as an indication of body temperature, the mouth also due to currents of air, and the rectum and vagina were considered "indecent." From six to 10 minutes were allowed for each temperature observation.

Wunderlich established certain principles which are the basis of clinical thermometry(16).

(1) The consistency of temperature in healthy persons, with one degree centigrade regarded as the average diurnal variation, the lowest point in the diurnal range coming in the early morning, and the high point in the evening.

(2) The variability of temperature in disease is according to fixed laws, and is determined by the nature, and degree of the disease or upon the increase or diminution in the degree.

(3) The importance of continuous 24-hour temperature records of each patient based on several observations each day.

Fielding H. Garrison states, "Wunderlich found fever a disease and left it a symptom."(17)

For the general acceptance of clinical thermometry by the medical profession, two tasks remained: (1) diffusing of knowledge of the new method, and (2) the development of a more convenient and accurate instrument. In the medical journals paper after paper followed the publication of Wunderlich's book. In Britain, Sir William Aitken (1825-1892) in his popular "Handbook of the Science and Practice of Medicine" gave strong support to the regular use of the thermometer. Sir Thomas Clifford Allbutt (1836-1925) exerted perhaps an even greater influence. He is credited with designing and introducing around 1866 a convenient pocket-sized thermometer to replace the long, cumbersome ones in use up to that time. Allbutt wrote about thermometry, as well as practiced it on his patients(18).

The profession, conservative as always, moved slowly, and one finds Sir Samuel Wilks (1824-1911) saying in his "Biographical Reminiscences" (19), "In 1870, I requested the Superintendent of Guy's Hospital to procure a clinical thermometer. It was nearly a foot long and was such a novelty that it was taken to the meeting of the British Medical Association for exhibition, where members regarded it with much curiosity and interest, although I am sorry to say, one or two with ridicule."

In America, little was done to promote the use of the clinical thermometer before Wunderlich's time. Benjamin Franklin conducted a series of experiments on himself in regard to the effect of hot and cold water on the body heat. James Currie says of him, "The authority of the American Bacon is of great weight in every branch of science he touches and particularly in respect to immersion in water, for doubtless he spent more time in that element than did any philosopher of modern days."(20)

William Beaumont (1785-1853), our "backwoods physiologist," made many observations of the temperature of the interior of Alex St. Martin's stomach. These were probably prompted to some extent at least by the old theory that the stomach is the seat of the heat of the body. Beaumont says (13): "I introduced the tube of the thermometer (Fahrenheit) through the perforation into the stomach — in 15 minutes the mercury rose to 100° and remained stationary. This I determined by marking the height of the mercury on the glass with ink, and after withdrawing it, placed it on a graduated scale."

Prior to the War Between the States, nearly all productive use of thermometry was made in the South. In New Orleans, an eminent physiological and clinical investigator, Dr. Bennet Dowler (1797-1879), as early as 1840 began studies on the hyperpyrexia of sunstroke. He was also especially interested in the rise of body temperature immediately after death and spent hours in the morgue making observations on "postmortem fever." His literary style is engaging, as when he speaks of himself pursuing "dismal researches on the frontiers of death, silent, alone, sitting for hours on a coffin among dead bodies — a pursuit that honest Charon, ferryman to the ghosts on the River Styx, would scarcely undertake." (21)

Dr. Samuel L. Metcalfe (1798-1856), graduate of Transylvania University in Kentucky, wrote a two-volume treatise published in London in 1843 on "Caloric: Its Agencies in the Phenomena of Nature," discussing critically contemporary doctrines of animal heat.

During the 50s, another Southerner, Dr. Joseph Jones (1833-1896), also of New Orleans, began studying animal heat by means of the thermometer. He also made use of the same instrument in his clinical work. During the Civil War he employed clinical thermometry frequently and consistently in the hospitals of the Confederates. He was ordered by the Surgeon General of the C. S. A. to make a detailed study of the fevers that existed in the military hospitals. These studies were continued after the war in New Orleans and were published in 1875 (22).

Dr. John Shaw Billings (1838-1913), a dis-

tinguished Army surgeon of the North, has written, "When I entered the Army at the beginning of the Civil War, I had two instruments which the other surgeons did not possess: (1) a set of clinical thermometers, and (2) a hypodermic syringe. The syringe was in constant demand. The thermometers were troublesome and little used". (17)

In New York, Dr. Austin Flint (1812-1886) introduced thermometry into hospital routine in 1865 (23). He employed the charts designed by Dr. J. M. Da Costa of Philadelphia (1833-1900), correlating the three vital signs; i. e., respiration, pulse rate, and temperature curve.

Perhaps the most important influence in educating both the medical profession and the public in the value of thermometry was an emigre French psychiatrist, Edouard Seguin (1812-1880). Seguin took up the cause with zeal and wrote article after article. In 1873, appeared his treatise "A Manual of Thermometry for Mothers, Nurses, Hospitalers, etc., and All Those who have Charge of the Sick and the Young." He pleaded with his colleagues thus, "With Mothers, I think it is our duty to teach everyone of them who can be taught, not only the use, but the philosophy of prophylactic thermometry; by which they would be rendered competent to foresee, and often ward off the perils that the thermometer predicts, always several hours in advance, as the barometer does a storm. Then let the hour of family trials come, or contagious disease invade the home; and by your side you have the faithful woman. Neighbors and quacks proffer in vain their nostrums, she stands by her thermometer knowing that a calm record of a day's fever brings more hope than does a disheveled *therapeusis*." Seguin's next book, "Medical Thermometry and Human Temperature," appeared in 1876 and was perhaps the most important factor in diffusing information on the subject in this country.

Equal in importance to the wide-spread understanding of the value of thermometry in medicine was the development of a convenient and reliable instrument. The thermometers used during most of the 18th and early 19th centuries for occasional observations on humans were generally of the meteorological type. John Hunter (1728-1793) is said to have had several

small mercurial thermometers produced around 1766 for his experiments on the body heat of animals(13).

During the latter part of the 18th century, a number of maximum and minimum, or registering, thermometers were devised. Lord Charles Cavendish produced an ingenious but complicated instrument in 1757. James Six proposed a more dependable type of design around 1782. His instrument had small movable indices operated by the rise or the fall of the surface of the thermometric liquid. For resetting a small magnet was used to draw the metal indices back down to the surface of the mercury. A still simpler instrument, working on the same principle but constructed in two separate parts, was described in 1790 by Daniel Rutherford, professor of medicine and botany at Edinburgh University. He, however, attributes the actual invention to one John Rutherford, M.D. These thermometers were intended mostly for meteorological observations, so will not be described in any detail.(10)

Another type of maximum thermometer was produced by Phillips and independently by Francisco Walferdin (1795-1880), a French physicist, about 1836. This instrument was used horizontally. A portion of the mercury column was separated from the rest by a minute air bubble. As the temperature rises, the detached portion of the column is pushed forward, but does not retreat when the temperature falls(24). Early clinical thermometers used this principle in their design.

Negretti and Zambra devised the type of maximum thermometer now usually employed for clinical work. Their instrument had a constriction in the tube near the bulb, past which the mercury easily expands, but cannot return when the temperature falls, since the column breaks at the narrowed point when the fluid begins to contract(24).

About 1860 the Germans began producing clinical thermometers with a printed scale inserted between two glass tubes. These were apparently inconveniently long and were used mostly for axillary readings. Dr. P. C-E. Potain (1825-1900) of Paris, described a thermometer on which the graduations were etched by hydro-

fluoric acid. It was made by Alvergnat Brothers for Potain and named after him(13). At about this same time the production of clinical thermometers was begun in London(25).

For a time adoption of the thermometer for clinical use in America was slow due to the expense and scarcity of the instruments. According to Seguin not more than 50 per year were imported around 1867. These came from London at a cost of \$3-\$4 each. The manufacture of clinical thermometers in this country probably began in the 1870s in New York. The earlier thermometers were made of round, non-magnifying glass. Patents covering the use of magnifying glass were issued about 1880. These early American thermometers employed the Phillips-Walferdin principle of placing a small bubble of air in the mercury column.

Today clinical thermometry is universally recognized as the very basis of modern medical practice. Millions of thermometers are produced annually and sell for comparatively low prices. Their manufacture is a tedious process requiring a total of 70 different operations. The self-registering device now usually depends upon a constriction or contraction at the base of the tube $\frac{1}{8}$ of an inch above the bulb produced by a highly-skilled glass blower with a finely pointed flame. The slightest deviation from the perfect contraction results in a "retreater" if the bore is not closed enough, or a "hard shaker" if it is closed too much. The U. S. Bureau of Standards has set up regulations that have been accepted by the manufacturers to govern the production and certification of clinical thermometers. The better grade of these instruments is each accompanied by a certificate bearing its individual number stating that this particular thermometer has been tested and found acceptable in accordance with government standards.

Unfortunately, most clinical thermometers used in Great Britain and the U.S.A. still bear the Fahrenheit scale. In this connection, it is interesting to read the words of Sir Clifford Allbutt written some 90 years ago: "It is a matter of regret that these instruments are all made on the Fahrenheit scale. It is an inconvenient scale in itself, and it has the additional disadvantage of making English and foreign observers mutually unintelligible. There really is

no excuse for its retention, as no human being supposes it to have any merit of its own. The new scale (Centigrade) is very easy to learn, and the change would not unsettle the mind of the nation, as the use of thermometers is confined to a minority of competent persons." (18)

Thus the story of clinical thermometry is

brought up to the modern era. The medical profession today is so accustomed to accepting the great utility of this indispensable tool that it is almost incomprehensible that its use by physicians in studying their patients was so long delayed. One is indeed impressed by the truth of the saying that the success of a discovery depends upon the time of its appearance.

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THE TREATMENT OF SCORPION STING

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SCORPION sting accidents are of relatively common occurrence in Arizona. (Stahnke 1950). Therefore, we feel that additional data regarding the overall problem of treating the victims should be of some service. The statistics herein presented have been obtained from 235 clinical reports sent in by Arizona physicians following the use of the antivenin manufactured and distributed by the Poisonous Animals Research Laboratory of Arizona State College, Tempe, Arizona under an appropriation of the Arizona state legislature. It is, therefore, issued gratis and distributed through certain depots as indicated in Table 1. We would like to emphasize that the antivenin is distributed free of charge and no physician or patient should be charged for the product. Each therapeutic dose is accompanied by descriptive literature and a clinical report blank. Upon the filling in and returning of the latter to the Poisonous Animals Research Laboratory a replacement for the used vial of antivenin is sent.

Every town or community that requests antivenin establishes one or more points of distribution depending on the size of the population. Using this depot system prevents an undue amount of the antivenin being idle in the physician's office and possibly becoming out-dated, but still making the product readily available.

Tables 2 through 6 contain some interesting data. The age group that most frequently falls victim to the scorpion's sting is 1-5 years. As children grow beyond "ground level" stage, scorpion sting accidents decrease. Ironically, 66 per cent of the cases are in the age group from 0 to 15 years, the ages during which scorpion sting is potentially fatal to individuals of normal health. This corresponds closely with the weights shown in Table 3 in which 63.5 per cent of the cases are 100 pounds or less.

It is commonly held that members of the minority races, because of supposedly more squalid living conditions, are victims more often of scorpion sting than the so-called "white" race. Table 5 shows 63 per cent of the patients were

of the white race. It might be argued that this was because the members of the minority race could not afford medical attention and simply "sweat-out" the experience. To some extent this might be true but the white race is not without its quota of low-income members. Observation would lead one to believe that the more abundant experiences in tropical and sub-tropical habitats may have taught the minority races a greater degree of caution and alertness.

Out of the 235 clinical reports, 216 vials of antivenin were actually injected. The other 19 were not used because of accidental breakage, or the patient succumbed before the antivenin could be given, etc. I.M. injections were given in 198 cases, I.V. in five and S.C. in one. Serum reaction of patients proved to be unusual. Out of 200 reports in which this information was given, 194 showed no reaction whatsoever and six gave a mild reaction to the skin test. Indications of hypersensitivity reported for these six

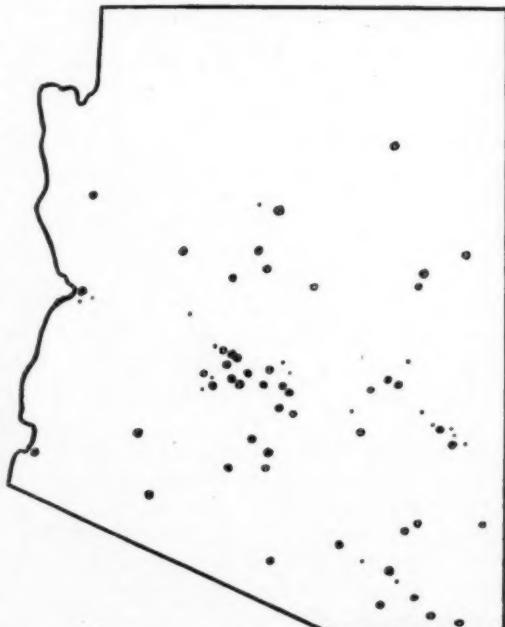


Fig. 1 Distribution of serum depots and home addresses of people stung by scorpions. "o" = depots; "•" = patients.

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TABLE I

Serum Depot Localities

	No. of Reports
Ajo	3
Avondale	0
Bagdad	3
Benson	4
Bisbee	0
Bowie	0
Buckeye	2
Casa Grande	0
Chandler	2
Coolidge	1
Cottonwood	0
Douglas	0
El Mirage	0
Florence	2
Fort Huachuca	0
Gila Bend	3
Gilbert	3
Glendale	17
Globe	9
Hayden	0
Keams Canyon	0
Kingman	0
Litchfield Naval St.	2
Luke AFB	2
Mesa	3
Miami	11
Morenci	0
Parker	33
Payson	1
Peoria	0
Pima	3
Phoenix	80
Prescott	0
Sacaton	4
Safford	9
San Carlos	0
San Manuel	0
Scottsdale	2
Sedona	7
Sells	0
Stanfield	1
Superior	5
Tempe	12
Tiger	0
Tolleson	0
Tombstone	2
Tucson	3
Wellton	0
White River	4
Williams AFB	0
Willecox	0
Winslow	0
Yuma	2

TABLE 2
Ages of Scorpion Sting Patients

Age	No.	Percent
0-11 mos.	10	4.4
1- 5 yrs.	90	40.0
6-10 yrs.	32	14.0
11-15 yrs.	17	8.0
16-20 yrs.	7	3.0
21-25 yrs.	8	3.6
26-30 yrs.	10	4.4
31-35 yrs.	13	5.8
36-40 yrs.	7	3.0
41-45 yrs.	9	4.0
46-50 yrs.	4	1.8
51-55 yrs.	6	2.7
56-60 yrs.	3	1.3
61-65 yrs.	5	2.2
66-70 yrs.	0	0.0
71-75 yrs.	4	1.8

225

100.0

TABLE 3

Weight of Scorpion Sting Patients

Lbs.	No.	Percent
0-20	8	4.1
21-40	67	34.0
41-60	30	15.2
61-80	9	4.6
81-100	11	5.6
101-120	12	6.1
121-140	19	9.6
141-160	23	11.7
161-180	11	5.6
181-200	6	3.0
201 plus	1	0.5

197

100.0

TABLE 4

Sex

	%
Male	125
Female	96

TABLE 5

Race

	%
White	137
Colored	13
Spanish	35
Indian	32
Japanese	1

TABLE 6
Home Address of Patient

ARIZONA	No.	Saint David	1
Ajo	3	Salt River Reservation	2
Arlington	1	San Carlos	1
Ashurst	1	San Jose	1
Bagdad	1	Scottsdale	5
Benson	2	Sedona	6
Buckeye	2	Stanfield	1
Central Heights	1	Stanton	1
Chandler	2	Superior	4
Coolidge	4	Tempe	8
Cork	2	Tolleson	4
Flagstaff	1	Tucson	3
Florence Junction	1	Vail	1
Fort Thomas	1	White River	3
Gila Bend	2	Winslow	1
Gilbert	4	Yuma	1
Glenbar	1		
Glendale	11		
Globe	7		
Goodyear	1		
Laveen	7		
Lehi Reservation	1		
Litchfield Park	1		
Little Acres	1		
Luke AFB	1		
Marionette	1		
Mesa	2		
Miami	7		
Norwalk	1		
Parker	20		
Peoria	2		
Pima	5		
Phoenix	51		
Sacaton	1		
Safford	1		

CALIFORNIA

Los Angeles	1
Bell	1
Earp	1
El Monte	1
Maywood	1
Parker Dam	2
Puente	1
Rivera	1
Wilmington	1

INDIANA

Elwood	1
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PENNSYLVANIA

Pittsburgh	1
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MEXICO

Rocky Point	1
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SUPPORTING THERAPEUTIC AGENTS USED

I. More than one supporting therapeutic agent:

	Dosage	Age	Weight lbs. 50	Remarks
1. Adrenal cortex Adrenalin (1-1000 sol.)	?	5 yrs.		Died: Antivenin not given.
Caffeine Sodium Benzoate	486 mg			
2. Alinate elix.	65 mg	14 mos.	22	
Phenobarbital	65 mg			
Nembutal	34.4			
3. Chlortrimeton	50 mg	5 yrs.	40	Also stung by red ant.
Cortisone	3 mg			
Na Phenobarbital	487.5 mg			
Pentothal	125 mg			
ACTH	20 units			
4. Avertin	2 cc	?	35	
Na Luminal	130 mg			
Na Amytal	65 mg			
5. Codeine	32.4 mg	21 yrs.	130	Antivenin reported as ineffective.
Demerol	50 mg			
Phenaphen No. 2	1 cap			
Nembutal	195 mg			
6. Seconal	97.4 mg.)	60 yrs.	200	
Axotal	Tab ii)	40 yrs.	175	
7. Na Luminal	130 mg	10 mos.	24	Died: Serum given minutes before.
Demerol	50 mg			
8. Na Luminal	130 mg	9 yrs.	70	Severe pain and convulsions.
Demerol	25 mg			
9. Na Luminal	162.4 mg	10 mos.	22	Severe convulsions.
Demerol.	20 mg			
10. Luminal	130 mg	11 yrs.	65	
Benadryl	50 mg			
11. Avertin	1.2 cc	4 yrs.	26	
Phenobarbital	32.4 mg			
12. Phenobarbital	32.4 mg	4 yrs.	35	
Ca gluconate 10%	8 cc			
13. Na Phenobarbital	195 mg	4 yrs.	?	
Benadryl	?			

II. One supporting therapeutic agent.

	Dosage Range	No. of Patients	Remarks
1. Amytal or Amobarbital	130 to 300 mg	3	
2. Aspirin	?	1	
3. Avertin or Tribromoethanol	2 cc	2	
4. Benadryl	30 - 60 mg	8	
5. Bufferin	?	1	
6. Calcium gluconate (10% sol.)	?	1	
7. Chloral Hydrate	487.4 mg	1	Not stung by lethal scorpion.
8. Chlortrimeton	30 mg	2	
9. Codeine	16.2 mg	1	
10. Demerol	20 - 100 mg	5	All had severe symptoms.
11. Dilantin	97.4 mg	1	
12. Morphine Sulfate	11.0 mg	1	Used 5 hrs. after antivenin.
13. Nembutal	32.4 to 292.4 mg	25	
14. Pentothal Sodium	780 mg	1	
15. Phenobarbital (Luminal)	16.2 mg to 650.0 mg	24	
16. Phenobarbital. Elixir	1 dram	4	
17. Seconal Na (or Secobarbital)	48.6 mg to 250 mg	10	
18. Sodium Bartisol	32.4 mg	1	
19. Na Phenobarbital (Na Luminal)	32.4 mg to 975.0 mg	74	
20. Thorazine	25 mg	1	

For the family physician acting in an advisory capacity to newcomers to the state, the manner in which these patients were actually stung might prove helpful. This data, considerably condensed is given below:

Age (mos.)	Sex	Time	Part of body & circumstances when stung.
3	m	2 a.m.	Leg while asleep in crib.
9	f	2 p.m.	Abdomen while lying in bed.
10	m	8 p.m.	Top of hand while lying on floor.
11	m	6 p.m.	Hand while playing on floor
12	f	9 p.m.	Sole of foot. Scorpion was in shoe.
	m	6 p.m.	
14	f	11 p.m.	Thumb. Reached for pan in kitchen cabinet; scorpion in pan.
15	f	8 p.m.	Hand. While sleeping on floor with mother.
16	f	10 a.m.	Chest and abdomen. While playing on floor.
	m	10 p.m.	Hand. Reached for doll; scorpion under doll's clothes.
18	f	2 a.m.	Foot. Scorpion fell off ceiling into bed.
20	m	9 a.m.	Leg. Sleeping on floor of jail with mother.
21	m	2 p.m.	Finger. Lifted board in yard.
23	m	9 p.m.	Hand. Picked up damp cloth.
			Foot. While walking on sidewalk.
(years)	m	8 a.m.	Shoulder and lower back. Stung while at play.
			Thumb. Picked up sprinkler; scorpion in sprinkler.
	m	5 p.m.	Thigh. While dressing; scorpion in clothes.
3	m	1 a.m.	Thigh. Scorpion crawled on him while sitting in chair.
	f	9 a.m.	Abdomen. While dressing.
3	f	8 p.m.	Foot. Playing in rock pile.
	m	9 p.m.	Finger. While lying on rug watching TV.
	m	11 p.m.	Hand. Reached up on top of dresser for toy.
4	m	8 a.m.	Leg. Scorpion crawled on leg while eating breakfast.
4	m	11 a.m.	Chest. Playing in garage; scorpion under board.
	m	6 p.m.	Hand. While picking bark off tree; scorpion was in crevice.
5	f	11 p.m.	Finger. While opening box of old clothes.
	f	9 a.m.	Finger. While playing in sand.
	m	6 p.m.	Finger. Playing in grass.
	m	10 p.m.	Wrist. Playing around rocks in desert.
6	m	11 a.m.	Finger. Crawled under bed and was stung.
	m	2 p.m.	Hand. On school grounds; scorpion hiding in dust rag.
7	f	8 p.m.	Back. Scorpion in clothing.
8	f	3 p.m.	Foot. Scorpion on towel while helping wash dishes; mother saw it and tried to brush it off; landed on foot of patient.
9	m	8 a.m.	Hip and thigh. Scorpion in trousers.
	f	11 a.m.	Shoulder. In sleeve of coat.
10	f	9 p.m.	Foot. Walking barefoot in house.
11	m	10 a.m.	Hand. Stung finger as scorpion was brushed from trousers.
12	m	10 a.m.	Thumb. Playing with calf skin.
	f	7 p.m.	Finger. Reached into floor drain.
13	m	11 p.m.	Finger. Sat on rock in South Mountain Park.
14	f	noon	Thumb. Picked up newspaper.
	f	2 p.m.	Hand. Picked up piece of Kleenex.
17	m	noon	Forearm. Lying on grass near building.
21	f	noon	Finger. Working under the car.
22	m	4 p.m.	Leg, below knee. Sitting on chair.
24	f	11 a.m.	Hand. While working in yard.
25	f	3 p.m.	Arm. Scorpion under canvas.
	m	4 p.m.	Lower leg. Scorpion ran up pants leg in cotton field.
	m	10 p.m.	Finger. While removing soiled levis from hamper.
27	m	5 p.m.	Thigh. While loading hay.
28	m	11 a.m.	Hand. While reaching in trash barrel.
29	f	3 a.m.	Wrist. Handling used adobe bricks.
31	f	9 a.m.	Foot. Walking across rug and stepped on scorpion.
33	f	10 a.m.	Finger. Tried to kill scorpion with piece of tissue.
35	m	9 a.m.	Hand. While sorting laundry.
38	f	3 p.m.	Thigh. Was lifting flagstones and scorpion crawled up leg.
43	m	9 a.m.	Hand. In vegetable bin.
44	f	10 a.m.	Foot. In shower bath.
45	f	8 a.m.	Breast and chest. Scorpion fell from drapes, down neck and inside brassiere.
	f	9 a.m.	Finger. Reached into paper sack which had been on ground overnight.
47	f	11 a.m.	Finger. Reached under damp board.
53	m	10 a.m.	Finger. Unboarding windows of cabin.
58	f	9 p.m.	Thumb. Patient was cleaning floor furnace.
62	m	9 p.m.	Arm. Brushed against bush.
73	f	9 a.m.	Foot. Walking in grass - barefoot.
			Foot and finger. Picked up wash cloth in sink and was stung on finger; threw scorpion to floor and got stung on foot.
74	m	6 p.m.	Knee. Scorpion crawled up pants.
75	m	10 a.m.	Toe. Walking barefoot in bathroom.

patients were as follows: "headache," "2 cm area of erythema," "slight erythema," "skin test slight positive-wheal enlarged," "induration and erythema at site of skin test," "slight reaction-itching and faint urticaria."

In the treatment of cases covered by the clinical reports, 203 patients were adequately cared for with one 3 ml vial, 12 patients required two 3 ml vials while a third, who was brought to the physician in a very serious condition, was given three 3 ml vials, one I.V. and two I.M.

Among all the patients receiving the antivenin, only two died. In fairness to the efficacy of the serum, some of the details of these cases are given below:

Case No. 1: Eighteen months, female, 16 lbs. Recovering from severe diarrhea. Child was sleeping on floor of jail with the mother when stung. Received only 2 ml of antivenin (instead of 3 ml) plus 300 mg. of Na Amytal.

Case No. 2: Ten months, female, 24 lbs. Treated by two different physicians. First physician administered two grains Na Luminal and 50 mg. Demerol approximately 70 minutes after scorpion sting. Second physician gave one 3 ml vial approximately five minutes before child expired.

Out of 216 patients given the antivenin, 148 received supporting therapy. This is in keeping with the following recommendations accompanying each vial:

"Supportive Therapy: Best results are normally obtained if the administration of sodium phenobarbital to the point of relaxation precedes the injection of the serum. Stopping the convulsions is accomplished by giving massive doses of barbiturates. Sodium phenobarbital is commonly used. Morphine and Demerol are contraindicated. Either one will produce a lethal effect even in the presence of a sub-lethal dose of *Centruroides sculpturatus* venom.

The selection of therapeutic agents will be of interest and are presented below:

Table 7 indicates that scorpion sting accidents may occur in any month of the year. With the installation of better air-conditioning systems and the more uniform temperature in homes throughout the year, greater numbers of sting accidents can be expected outside of the summer season. Since scorpions cannot survive in high temperatures, more will be attracted to the well refrigerated homes.

TABLE 7
Distribution of Scorpion Sting by Months

Month	No.	Percent
January	8	3.7
February	5	2.3
March	6	2.8
April	12	5.5
May	25	11.5
June	38	17.4
July	38	17.4
August	32	14.7
September	21	9.6
October	19	8.7
November	7	3.2
December	7	3.2
No month given	7	
	225	100.0

Conclusions: We realize that physicians are very busy people. Therefore, the care exercised by most of those using the antivenin when giving the data requested by the clinical report form is greatly appreciated. We would, however, like to enter a plea for a more judicious use of the antivenin. Cats are not blessed with large quantities of blood. A hyperimmunized animal will at best provide only about seven therapeutic doses. The antivenin is species specific for *Centruroides sculpturatus* and *C. gertschi*. To administer the antivenin for envenation by other Arizona species of scorpion is a waste of the serum. Swelling, ecchymosis, or erythema at the site of the sting is a strong indication that the offending scorpion was not one of the two lethal species. Hyperesthesia at the site of the sting is positive evidence of this lethal venenation. Even then, where sufficient time has elapsed — approximately 30 minutes to one hour — a child will not succumb if it is not in chaotic convulsions. An adult in normal health, certainly does not need the serum. Actually, the medical risk in giving, instead, some barbiturate is much less than injecting a foreign protein. We feel that a foreign serum is a poor therapeutic agent at its best. Consequently, we are continuing to test other substances with the hope of finding a completely satisfactory chemotherapeutic substitute.

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THE DIAGNOSIS AND TREATMENT OF THE GREAT SIMULATOR, INFECTIOUS MONONUCLEOSIS

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HISTORY. Working out the natural history, the etiology, the signs and symptoms, and the differential diagnosis of this disease has been uncertain, difficult, and tedious. As a matter of fact, there still remains a great deal of information that is unknown to us, yet vital to its understanding and treatment, and probably in no common febrile illness of such wide distribution throughout this country today, has the diagnosis been so frequently missed, and its treatment so improperly handled. In directing a large communicable disease hospital, where I have had the privilege of serving for over 33 years, the old adage of "know syphilis, know medicine," has been replaced with the new adage "know infectious mononucleosis, know medicine," — pertaining of course to the differential diagnosis of the various infectious diseases. It is the great simulator, and no disease enters our hospital that, at times is not exactly simulated by it.

Though Filatow in Russia described an idiopathic lymphadenopathy in 1885, to be followed in 1889 by the German Pfeiffer, who placed the disease on a sound clinical basis and gave it the name glandular fever, it was not until 1908 that Terflinger proved that infectious mononucleosis could occur in adults as well as in children. Even then, it was 1909 before Burns pointed out that small mononuclear elements predominated in the blood in this disease, no account of blood studies having appeared before this time.

Eleven years later, Sprunt and Evans, on the basis of six cases observed by them, described a new disease, which they named infectious mononucleosis, being totally unaware of the work of their predecessors, and believing themselves to be the discoverers of a new clinical entity. They were not alone, for that same year Morley and Tidy noted a transitory lymphocytosis in a boy with glandular fever, which they reported to the Royal Society of Medicine as a new disease. Downey and McKinley were joint authors of a beautifully illustrated article in 1923, which gave a complete description of the abnormal cells of the lymphocytic series occurring

in infectious mononucleosis. This paper was classical and nothing fundamental has been added to it since. Though only children were supposed to have the disease, and adult cases were presumed to be rare, they stressed the large number of adult cases, though others had also pointed this out. Like Longcope, they noted that glandular enlargement was far more marked in younger age groups.

While others suspected the occasional occurrence of encephalitis as a manifestation of infectious mononucleosis, it was not until the article by Epstein and Dameshek in 1931, and by Johannsen in the same year, that a clear description of the neurological manifestations of the disease was given. Probably the next thing of historical import was the anomalous discovery by Paul and Bunnell in 1932, that heterophil agglutinins develop in high titer in human serum during the course of infectious mononucleosis. However, it was discovered later that patients with serum sickness also develop heterophil antibody reactions with the red blood cells of sheep, and that the test is undependable when only low titers are obtained. To correct this, Stuart and associates found that sheep cell agglutinins in normal serum were adsorbed by guinea pig kidney, but not by boiled beef erythrocytes; that the agglutinins in serum of infectious mononucleosis patients were adsorbed by the boiled beef cells, but not by guinea pig kidney; and that those in the serum of persons with serum sickness were adsorbed by both guinea pig kidney and beef cells. By using these adsorption tests, the exact heterophil antibody of infectious mononucleosis could be differentiated from the others, and the correct diagnosis established. Today, the modified Paul-Bunnell test is known as Davidsohn's heterophil antibody test, as he did additional work along this line and summarized the investigations of others in the *Journal of the American Medical Association* in 1937.

The last contribution of historical interest is that of Isaacs in 1948, who showed that many acute cases of infectious mononucleosis of any

type, after apparent recovery, subsequently remain unduly fatigued; that the disease assumes a chronic, long-continued course in these people; that its duration varies from months to years, having exacerbations with partial remissions; and that it frequently presents a picture similar to that of undulant brucellosis, or of the recurrent type of Q Fever. The fact that infectious mononucleosis assumes a chronic form is not generally known and is disputed by some, the recurrent episodes being labeled as reinfections by them; by others it is misdiagnosed or labeled "fever of unknown origin."

Isaacs noted that the heterophil reaction in these chronic cases rarely exceeded 1:64; that they often had a false positive Kahn test; and that this false positive might last either a short time or as long as six years. In the 206 cases he originally reported, among other erroneous diagnoses attributed to them, he noted the following: lymphosarcoma, leukemia, Hodgkin's Disease, brucellosis, Addinsson's Disease, neurasthenia, psychoneurosis, hypothyroidism, bacterial endocarditis, and many others.

He pointed out very clearly that these cases represented a chronic relapsing type of infectious mononucleosis; were not recurrent attacks or reinfections as erroneously believed; and were almost invariably misdiagnosed. A short resume of his work will be found in the George R. Minot Symposium on Hematology.

Finally, in the historical discussion, we must allude to the fact that no one has been able to reproduce this disease in man, experimentally; that its specific etiological factor remains unknown; and that in the present state of our ignorance, various types and manifestations of infectious mononucleosis, as these are presently understood, may ultimately turn out to represent more than one etiological entity.

Definition. Infectious mononucleosis, a term formerly synonymous with glandular fever, as we know it today is an infectious disease of unknown origin and of low virulence; it occurs most commonly as single, isolated, sporadic cases in families; but at times it assumes epidemic proportions, usually in institutions. Its symptomatology and course are exceedingly variable and inconstant, usually presenting cervical lymphadenopathy, fever, characteristic changes

in the lymphocytes without anemia, and frequently accompanied by splenomegaly. The types commonly seen are: the glandular, the anginose, the systemic or typhoidal febrile, the hepatomegalic with jaundice, and the central nervous system types, either involving the meninges or occurring as encephalitis. As in abortive poliomyelitis, so in infectious mononucleosis, there exists a latent or subclinical type which shows little or no clinical evidence of disease, yet when tested serologically during epidemics, presents strong evidence of having the disease, as shown by the presence of a positive Davidsohn heterophil test, as well as Downey cells in the peripheral blood.

Incubation Period. While unknown, seems to vary from four to 14 days or longer.

Signs and Symptoms. The signs and symptoms of this very protean disease vary tremendously at onset. It may be ushered in with a sudden chill followed by a series of chills, fever, prostration, and a paucity of physical findings. In contrast, it may present itself as a slow, insidious, low-grade fever with a mild catarrhal rhinitis, morning sore throat of minor degree, gastrointestinal upset, mild night sweats accompanied by insomnia, and a period of a week or two of weight loss and excessive fatigability. There are those in whom swollen glands are the only complaint. Again, the disease begins like an acute upper respiratory infection, with headache, malaise and sore throat.

Glandular Type. Lymph glands enlarge early, particularly those along the stenocleidomastoid, and their swollen appearance at the angle of the jaw has been mistaken for mumps. The glands may be moderately tender or painful to pressure. To a lesser degree, the inguinal and axillary glands enlarge and become tender. The spleen and liver enlarge, though the latter is not unusually palpable, and in 20 per cent of the cases or more the spleen may remain grossly undetectable by palpation. However, if accurately percussed, the spleen usually will be found at the ninth interspace in the mid-axillary line instead of the sixth, where it normally belongs. In the severer cases, x-ray studies may detect enlarged glands along the trachea and in the mediastinum, and pressure from them may cause a troublesome cough. Also the disease, in any of its types, may develop an atypical pneumonia. In

severer cases, pain develops in the abdomen as the result of enlargement of the mesenteric glands, and at times, these are palpable.

Anginose Type. Frequently this starts abruptly as an acute sore throat with a true membrane, indistinguishable visually from that of diphtheria, of Vincent's angina, of streptococcal sore throat, or of confluent tonsillitis. On the other hand, it may be ushered in by one or two weeks of prodromal malaise for which no apparent cause is found until the throat symptoms develop. In all cases the diagnosis requires laboratory substantiation. It so closely resembles diphtheria, that despite repeated negative cultures, on more than one occasion large doses of diphtheria antitoxin have been administered to patients with this type of disease. Blood platelets may be affected, and in some cases virtually disappear. In the anginose type, this may be accompanied by peritonsillar swelling and sloughing ulcerations. With this lack of platelets in the blood, severe hemorrhage may accompany the sloughing, and the bleeding may be almost impossible to stop. It usually occurs at the inferior pole of the tonsil and may continue to bleed around the applied hemostatic sutures or forceps. Fever may reach 105° F. in severe anginose cases, falling by crisis; in other cases by lysis, requiring several weeks to return to normal if untreated.

Typhoidal or systemic febrile type. At times this type is exceedingly difficult to differentiate from other infectious fevers in which the spleen enlarges. It requires laboratory differentiation in all cases. It particularly simulates typhoid fever, brucellosis, murine typhus, and occasionally Q Fever, in all of which the spleen may enlarge.

However, in about one fifth of all the cases of infectious mononucleosis seen, the spleen remained impalpable. A word of caution is necessary in this connection: the spleen is extremely friable in this disease and the attempt to palpate its margin through the abdominal wall has frequently led to splenic rupture with hemorrhage, and in some instances, death.

The liver has been involved in every case of infectious mononucleosis that we have ever tested, regardless of the type of the disease, all tests showing impaired function. A damaged liver must, therefore, be considered a part of each and every case of infectious mononucleosis, regard-

less of type, varying only in severity and degree in a particular case.

Heptomegalic Type. As the name implies, liver involvement plays the predominant role in this type. In its early course, its symptomatology is identical with that of infectious jaundice or homologous serum hepatitis, the patient developing an enlarged spleen and liver, followed by jaundice and accompanied by the signs usually seen in febrile illnesses. None of these three types of hepatitis can be differentiated one from the other except by a careful history, consideration of the course and incubation period of the disease, and more particularly, by the specific laboratory tests for infectious mononucleosis. It is unfortunate that clinically, infectious mononucleosis in all its phases is so little known; that it is considered such a mild disease; and that it is so ignored in differential diagnosis by the average practitioner of medicine, be he specialist or generalist; and in particular, that more attention is not paid to the differentiation of infectious mononucleosis from the other two hepatitis entities, which usually may not be differentiated one from the other except by inference and suspicion.

It has been stated upon entirely untenable grounds that the so-called Downey cells, the atypical lymphocytes of infectious mononucleosis, are not specific for that disease inasmuch as they also occur in infectious hepatitis. This is putting the cart before the horse: when these cells are seen in any type of infectious jaundice, the diagnosis is infectious mononucleosis, none other, and the differential diagnosis is established. The rising titer of the heterophil usually clinches this, especially after the 11th day of the disease, but this test is negative in a fifth of the cases on one examination. If examined serially over several weeks, the number of positive heterophils increases proportionately, but it still remains absent in a number of cases.

Central Nervous System Types. In the last few years a number of cases with neurological manifestations has been reported. A personal communication from Dr. Martin Seifert, of the Evanston Communicable Disease Hospital, is to the effect that in his hospital this disease now constitutes one of the commonest and most puzzling differential problems from acute poliomyelitis. We have had the same difficulty in

distinguishing between these two diseases at times, especially early in their course.

The central nervous system symptoms of infectious mononucleosis to a marked degree, may also resemble those of infectious encephalitis of the type that follows other febrile entities. Meningeal signs and symptoms may be the first ones noticed, and the case may appear to be early meningitis; again, a particular case may run the usual course of one of the various types of infectious mononucleosis, and then have the signs of meningitis, or of encephalitis, develop after the previous symptoms have nearly or completely subsided. Again, the disease appears first as a benign aseptic or lymphocytic meningitis and disappears entirely, later to be followed by distinguishable features of infectious mononucleosis. In this last type, the blood count usually shows a polymorphonuclear leukocytosis, while at the same time the cells in the spinal fluid are lymphocytes. Downey cells occur consistently in the spinal fluid, but I have never had a positive heterophil reported from spinal fluid.

Paresis and other cerebral signs occurring during infectious mononucleosis disappear without residual effects as a rule, but some times a typical infectious neuritis (Guillain-Barré) syndrome appears, and death has resulted in a few cases. In all such cases, the onset was with exceptionally severe headaches, and respiratory insufficiency was reported to be the cause of death.

Recently we saved such a case by tracheotomy and placement in a Drinker respirator. Such cases are being reported in increasing numbers, and in October 1956, Eugene Frenkel and his co-workers reported a dramatic recovery in an anginose case complicated by meningo-encephalitis of 26 days' duration, occurring within 24 hours after they instituted vigorous cortisone therapy.

Lesions of the Skin and Mucous Membranes. Rarely, an enanthem occurs in infectious mononucleosis, consisting of a small number of pin-head-size macules varying in number from a few to a couple of dozen that change from bright red to a darker color in 36 to 48 hours, and which usually disappear within four days. Various exanthems have been described, from those which resemble the rose spots of typhoid fever, to a maculopapular fine dry rash indis-

tinguishable from German measles, which is usually seen in cases with moderately high or long-continued fever. In addition, petechiae have been described from time to time, occurring at the tips of the fingers and at the mucocutaneous junction of the lips. Rose spots are apt to be most confusing because they appear at the end of a week, which is about the time the rose spots of typhoid fever first make their appearance. In addition, purpura hemorrhagica and lesser purpuric lesions of the skin have been seen from time to time, and just to confuse the dermatological picture more, typical urticarial eruptions have also been described. The protean manifestations of these eruptions might tend to lend minor strength to the concept of the pathogenesis of infectious mononucleosis as being due to an allergic hypersensitivity, rather than to the prevailing totally unproved concept that a virus ultimately will be incriminated as the cause of this disease.

Hematological and Pathological Aspects. The blood picture in infectious mononucleosis is quite characteristic. At present, it is not believed to be absolutely specific, but most of the doubt as to its specificity has been due to the belief that infectious hepatitis also shows Downey cells in the stained blood smear. More and more, less credibility is given to this particular reason for doubt, as the preponderance of evidence is that such cases are not infectious hepatitis, but actually are cases of infectious mononucleosis of the hepatic type.

Non-specificity is further attributed to Downey cells because of the alleged fact that they occur in a few other diseases, especially typhoid fever, Q fever, and a few others. I am inclined to agree with Kracke in his statement that "The atypical lymphocyte is specific for infectious mononucleosis and should act as a definite diagnostic criterion for the disease." The presence of typical Downey cells in the peripheral blood of a sick patient means that the cause of the patient's illness is infectious mononucleosis.

As to other conditions in which Downey cells are said to occur (with increased monocytes and atypical lymphocytes), more doubt is cast daily upon their so-called non-specificity.

Downey cells reported present in what appeared to be other illnesses, have, upon closer inspection, turned out to be plasma or other

abnormal types of cells: in other instances, hematologists have failed to find abnormal cells of any type in cases where they were supposed to have been present, or at least no cells that met the criteria for Downey cells as seen in infectious mononucleosis. William Ayres points out that the nucleoli of the atypical lymphocytes of infectious mononucleosis remain practically unmentioned in the literature. Using special stains containing Azure C, he demonstrated that these nucleoli, unlike those seen in other diseases, are large, numerous, and irregular in shape.

The most striking feature in infectious mononucleosis is found in the appearance of these Downey cells in the stained blood smear. Indeed, the diagnosis is established beyond a reasonable doubt by finding them present in a patient's blood. With rare exceptions, and usually due to other factors, among which are rare severe cases of infectious mononucleosis of long duration, anemia is not part of the picture in this disease, and the hemoglobin and erythrocytes are not substantially altered. This is important to remember, for we have seen cases misdiagnosed leukemia after a lymph gland biopsy, and then treated with X-ray therapy, where a single careful blood study was sufficient to establish the correct diagnosis of infectious mononucleosis. Indeed, one death has been reported as a result of this type of erroneous diagnosis and therapy.

The total white blood count is neither typical nor consistent. Aside from the Downey cell, the characteristic thing is a change in the morphology of the blood from day to day. Commonest is a leukopenia early in the disease, followed by a leukocytosis with a relative or absolute lymphocytosis, and the appearance of abnormal monocytes and lymphocytes by the end of the first week, or soon thereafter. This leukocytosis tends to subside to normal in the third week. The leukocyte count usually is the highest, with the greatest predominance of normal and abnormal lymphocytes, at the time the fever is the highest, and counts of 30,000 to 50,000 are not unknown. The striking feature of the blood picture is the differential white count, with its constant typical shifting toward abnormal Downey cells and lymphocytes, at the expense of the neutrophils. These atypical Downey cells show the typical foamy cellular structure with the bubbly vacuolization so characteristic in this disease.

Even experienced hematologists have been known to report plasma cells as Downey cells and vice versa. It takes continuous and repeated observation and experience day after day to become expert in their differentiation, but in typical cases, interns soon learn to distinguish them easily. The same remarks apply to the diagnosis of the disease; but when Downey cells are typical; when the course is consistent with the diagnosis; and when the heterophil becomes positive and increases in titer when run serially; the diagnosis is assured. Incidentally, this disease, once considered limited to children and relatively rare, is not true to either concept: it is exceedingly common and is diagnosed more and more often in adults.

Some of the pathological conditions noted in the disease will be mentioned briefly. Gross changes are almost exclusively confined to lymphoid structures, and particularly the spleen. Hyperplasia of the nasopharyngeal lymphoid structures is consistent. Enlargement of the liver is also consistent. The lymph nodes show a diffuse lymphoid hyperplasia of the larger and medium type cells with a merging of the stroma and loss of follicular structure. Fibrosis and reticular hyperplasia are present. The lymph nodes appear to be the seat of the disease, and in them, the spleen and the liver, the most marked changes are seen. Perivascular round cell cuffing occurs in virtually all the tissues of the body. The granulocytic components of the marrow are either normal or increased, and the erythropoietic function appears to be unchanged, which explains the absence of anemia in most cases of this disease. Myocarditis occurs, with the usual perivascular cuffing noted. A marked destruction of the scaffolding structures in the spleen and liver, similar to that noted in the lymph glands, is consistently observed.

Differential Diagnosis. It is our daily lot in the communicable disease section of the Los Angeles County General Hospital to have to consider this disease in the differential diagnosis of every disease that enters our admitting ward. It exactly simulates the various anatomical types of diphtheria, nasal, tonsillo-pharyngeal, and laryngeal. It is easily mistaken for Vincent's Angina: follicular and confluent tonsillitis is often simulated by the early and milder cases. Severe cases may be mistaken for agranulocytic angina. It has been variously misdiagnosed as

meningitis, encephalitis, encephalomyelitis of the Guillain-Barré type, measles, German measles, scarlet fever; for poliomyelitis repeatedly; for lymphosarcoma, Hodgkin's disease and acute or chronic lymphatic leukemia; for rheumatic fever and subacute bacterial endocarditis; for typhoid fever or dysentery; for undulant fever and a whole host of others, including regional ileitis, appendicitis, tularemia, septicemia, influenza, miliary tuberculosis, and the throat lesions of secondary syphilis. I could easily get others from my files. The diagnosis of lues is particularly dangerous when in error, for infectious mononucleosis often produces a falsely positive Kahn and Wasserman, requiring the treponemal immobilizing antibody (TPI) test to rule out syphilis, even though Downey cells are present. There is no disease in the infectious disease field that infectious mononucleosis does not exactly simulate at times and, as we have pointed out, these misdiagnoses may have very serious consequences for the poor patient.

Prognosis. The vast majority of cases, like those of abortive poliomyelitis, are never seen by a physician. They have their mild illness with its sore throat and quickly recover. On the other hand, even among the mild cases, prolonged periods of weakness and prostration, following apparent recovery, are common and discouraging to many patients, and their symptoms remain consistently undiagnosed as to etiology. About the only causes of death, in the few who have died of this disease, have been spontaneous rupture of the spleen, incident to its palpation during physical examination, and lesions of the brain or central nervous system. Among the rare complications are suppurative adenitis, endocarditis, respiratory insufficiency, and prolonged icterus with fever.

Transmission of Infectious Mononucleosis. No unquestioned experimental transmission of this disease from man to man, from man to animal, or from animal to man, has ever been recorded. While articles have been written purporting to show that material obtained from individuals sick with infectious mononucleosis, and subsequently inoculated into animals, has produced a disease capable of serial transmission to other animals, it has not been proved to the satisfaction of the majority of scientists working in the field, that the disease in question was infectious mononucleosis. Possibly this failure may be due

to species-specificity of the disease for man; because the experimental approach was faulty; or most probably, because so far, the material investigated has had to be taken at an unpropitious moment, viz., too late in the disease. At this point I should like to point out that only four years have elapsed since the virus of poliomyelitis was first isolated from the blood, although for 40 years or more investigators postulated that it had to be present and sought unsuccessfully to recover it from there. The reason it was not found was because it usually disappears entirely from the blood before the first symptoms appear. An analogous situation may obtain in infectious mononucleosis.

In a recent summary, Hoagland points out that infectious mononucleosis practically never appears in roommates or as a cross-infection in open hospital wards. He presents credible evidence that the disease may be carried from person to person in infected saliva, and spread by kissing. He states that this mode of transmission would account for the age groups of children and adults in whom the disease most consistently occurs.

Treatment. Most cases are too mild to require a doctor, their disease is self-limited, and in a day or two they recover. Probably the majority of cases are of this type. In severer cases, and the glandular and anginose are far from the commonest, treatment in the past usually has been supportive and symptomatic. Regardless of type, there was nothing else known to do.

When the anti-infective drugs became available, the sulfonamides and antibiotics, they were given assiduously. Today there is ample proof, well documented in the literature, that these drugs are entirely worthless in the treatment of infectious mononucleosis.

More recently, successful treatment of the disease with ketosteroids, particularly cortisone, has been reported enthusiastically in the literature. Before cortisone was available, Isaacs reported cortical adrenal extracts were the only beneficial therapeutic agents in his chronic cases. Cortisone, and ketosteroid therapy in general, are certain to be rapidly evaluated now, and to assume a place in treatment of these cases, particularly the most toxic acute cases, and in the long-continued chronic undulant types.

Human, pooled, convalescent, infectious mono-

nucleosis serum, as well as human, pooled, convalescent, scarlet fever serum have been noted by different investigators to effect very rapid beneficent changes in infectious mononucleosis patients to whom they were given in sufficient amounts. Immunotransfusion appeared to effect the same result.

Starting in 1940, we treated the severer cases of this disease that entered our hospital with human, pooled, convalescent scarlet fever serum. The result was excellent. These patients developed a sense of euphoria within 24 hours, and in the majority the disease appeared to be completely arrested within 72 hours. In 1948, scarlet fever serum became difficult to obtain. Scarlet fever, itself, virtually disappeared from the wards of the hospital because of anti-infective therapy with the sulfonamides or antibiotics administered in the home by physicians. It seemed wise, therefore, to see what might be accomplished in the treatment of this disease with suitable doses of gamma globulin.

Starting in 1948, gamma globulin was given to virtually every case of infectious mononucleosis that was admitted to our hospital. In more than 200 cases so treated, the result was excellent in every case with two exceptions: one of these was tracheotomized in a respirator with the complication of infectious neuronitis (Guillain-Barré); the other was a complicating meningoencephalitis. In neither case did the antibody content or therapeutic substance contained in the gamma globulin appear to be able to pass the choroid barrier in the spinal fluid, and neither patient was benefited. In four additional infectious encephalomyelitis or encephalomeningitic patients, however, the same good result was obtained that we obtained in all the cases of other types. No case of frank icterus of the type usually confused with infectious hepatitis was seen or treated in this method; I presume because these cases were misdiagnosed as infectious hepatitis and sent to other wards of the hospital.

The average dose of gamma globulin was 10 cc. given intramuscularly. In some cases, not benefited in 24 hours, an additional 10 cc. were given. In other cases 20 cc. intramuscularly were given initially because of more severe symptoms in the case in question. The largest dose given was 200 cc., given intramuscularly to an im-

portant movie star who had the ulceroglandular anginoce type, the entire pharynx presenting a sloughing appearance, with a dirty greyish membrane visible and smellable. This young lady was critically ill and her absence from the lot was costing the motion picture studio over \$25,000 per day. They had five days of "shooting" remaining and unless she were quickly rehabilitated, the cast would scatter, never to be reassembled, resulting in a huge financial loss to the studio due to inability to complete the picture. To return the star to the lot at the earliest possible moment was imperative. Furthermore, her wedding was set for two weeks away.

Seven days from the day the gamma globulin was given, she was back on the lot, and subsequently her marriage was performed according to plan.

Usually after these patients receive their gamma globulin, they have a feeling of euphoria within 24 hours, and objectively, from the standpoint of changes in the temperature, pulse and respiration, the majority of them recover from acute manifestations of the disease within 72 hours.

In the average case of infectious mononucleosis, in which the dose of gamma globulin is adequately assessed as to size, it acts as specifically as antitoxin does in diphtheria, and if too small a dose is given, there is no harm in repeating it. However, the high cost of gamma globulin is apt to put it out of reach of many patients that need it most.

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ABSTRACTO**RECONSTRUCCION PLASTICA DE LA EXTROFIA DE LA
VEJIGA URINARIA COMBINADA CON OSTEOTOMIA
BILATERAL DE LOS ILIACOS**

Por el

Dr. W. G. Shultz

Tucson, Arizona

LA OSTEOTOMIA bilateral de los iliacos permite una buena aproximación de los huesos púbicos siendo este el factor que permite reconstruir un esfínter ureteral sin tener que separar los músculos del pubis. Además hace posible una muy fácil aproximación de los músculos abdominales sin tener que hacer desplazamiento de las fascias, resultando, entonces, una pared abdominal bastante fuerte.

Es mi parecer que es ésta la primera vez que la combinación de dichos procedimientos se ha usado con el objeto de resolver este problema.

La osteotomía bilateral de los iliacos se efectuó inicialmente. Dos semanas después la reconstrucción plástica de la extrofia de la vejiga se llevó a cabo, y, en esta ocasión, el ortopedista disecó los huesos púbicos, colocando dos suturas fuertes sobre cada uno de ellos, después de lo cual fueron aproximados tanto como fué posible anudando las ligaduras.

El ortopedista no intervino en la operación con dicho propósito, hasta después que la vejiga

hubo sido completamente construida y la construcción del esfínter ureteral iniciada aproximando los músculos esfinterianos y suturando justamente debajo de su inserción en el pubis. La pared abdominal fué cerrada sin desplazamiento de las fascias. La aproximación de los músculos fué fácil y solo hubo un exceso de piel en el extremo superior de la incisión.

Férulas ureterales, inicialmente de cuatro puntadas de alambre de vitalio, cambiadas después de 10 días a cuatro puntadas fuertes de seda, reemplazadas por una sonda de Foley #10 en el 35avo día post-operatorio y quitada una semana más tarde, haciendo un total de seis semanas de la aplicación de la férula.

La combinación de estos dos procedimientos resultó ser un excelente método en la corrección de los trastornos sufridos por el paciente al andar, lo mismo que hubo muy buen resultado en lo que a funcionamiento de la vejiga concierne. La paciente no sufre incontinencia. Su vejiga tiene una capacidad de 7 onzas, y sus riñones son normales en los pielogramas intravenosos, lo mismo que tiene buen control urinario.

Trabajo, presentado en la Convención de la Sociedad Médica de E.E.U.U. y México en Mazatlán, Sinaloa Mayo, 1957.

PLASTIC REPAIR OF EXTROPHY OF THE URINARY BLADDER COMBINED WITH BILATERAL OSTEOTOMY OF THE IL'IA

(Abstract)

By Dr. W. G. Shultz

Tucson, Arizona

THE bilateral osteotomy of the il'ia makes possible close approximation of the pubic bones, and this is the factor which makes it possible to construct a urethral sphincter without separation of the muscles from the pubic bones, therefore avoiding damage to either nerve or blood supply of the urethral muscles. It likewise makes it possible to very easily approximate the abdominal muscles without fascial sliding procedures and results therefore in a strong abdominal wall.

I believe this to be the first time that this combination of procedures has ever been used in the approach to this problem.

The bilateral ilial osteotomy was first performed. Two weeks later the plastic repair of the bladder extrophy was performed and at this time, the orthopedic surgeon dissected out the pubic bones and placed two coarse silk sutures under each, after which the pubic bones were as closely approximated as possible with pressure and the ligatures tied.

The orthopedic surgeon did not enter the

operation for this purpose until after the bladder had been completely constructed and construction of the urethral sphincter had been started. After the above procedure, I completed the construction of the urethral sphincter by suturing the sphincter muscles together just below their attachment to the pubic bones. The abdominal wall was then quite readily closed without fascial sliding procedures. In fact, the muscles came together quite readily and there actually was an excess of skin at the upper end of the incision.

Urethral splints of first, 4 strands of Vitalium wire, changed after 10 days to 4 strands of coarse silk, which was replaced with a #10 Foley catheter on the 35th postoperative day and removed a week later add up to a total of six weeks of urethral splinting.

The combination of these two procedures resulted in excellent correction of this patient's walking as well as a good functional end result insofar as the bladder is concerned. The patient does not have enuresis. She has a bladder capacity of seven ounces and normal kidneys on I.V. pyelograms. She has good urinary control.

Presented before the Medical Society of the United States & Mexico, May 1957.

The President's Page

IN MY INAUGURAL ADDRESS I SPOKE OF THE DESIRABILITY OF A FEE SCHEDULE. AFTER THINKING OVER THE MATTER I DOUBT IF WE COULD EVER AGREE ON A STATEWIDE FEE SCHEDULE.

HOWEVER, I AM SURE THAT EACH COUNTY SOCIETY COULD AGREE ON A FEE SCHEDULE. THUS, MARICOPA AND PIMA COUNTIES FEE SCHEDULES MIGHT BE EXACTLY THE SAME WHILE PINAL, COCONINO, AND YAVAPAI COUNTY SCHEDULES MIGHT BE THE SAME, OR LESS, DEPENDING ON THE WISHES OF THE VARIOUS COMPONENT SOCIETIES.

THE BASE ON WHICH WE COULD ALL AGREE MIGHT BE THE CALIFORNIA RELATIVE VALUE SCHEDULE. THEN EACH SOCIETY COULD DESIGNATE THE DOLLAR VALUE OF EACH UNIT. FOR EXAMPLE, THIS MIGHT BE \$4 FOR AN OFFICE PROCEDURE, \$5 FOR HOSPITAL PROCEDURES, \$4 OR \$5.15 FOR RADIOL-OGY AND PATHOLOGY, ETC.

THE WESTERN ORTHOPEDIC SOCIETY HAS A PUBLISHED FEE SCHEDULE FOR ALL THEIR PROCEDURES WHICH LISTS MINIMUM, AVERAGE, AND MAXIMUM FOR EACH PROCEDURE. I BELIEVE THAT THIS IS AN EXCELLENT WAY OF HANDLING THIS SITUATION. THEN EACH DOCTOR HAS A METHOD OF VARYING HIS FEES TO THE ABILITY TO PAY OF THE PATIENT.

I URGE EACH COUNTY SOCIETY TO ACTIVELY PROCEED TO STUDY THIS PROBLEM.

C. C. CRAIG, M.D.
PRESIDENT, ARIZONA MEDICAL ASSOCIATION

Editorial Page

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Manuscripts should be typewritten, double spaced, and the original and a carbon copy submitted.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

7. Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this Journal. Ordinarily contributors will be notified within 60 days if a manuscript is accepted for publication. Every effort will be made to return unused manuscripts.

8. Illustrations—Ordinarily publication of 2 or 3 illustrations accompanying an article will be paid for by Arizona Medicine. Any number beyond this will have to be paid for by the author.

9. Reprints—Reprints must be paid for by the author at established standard rates.

The Editor is always ready, willing, and happy to help in any way possible.

(The Opinions expressed in original contributions do not necessarily express the opinion of the Editorial Board.)

DRINK NO LONGER WATER, BUT USE A LITTLE WINE—

EVER since Bernard DeVoto(1) shook up the civilized world with his panegyric upon America's great contribution to the betterment of man's lot, the martini cocktail has become too common as a subject of conversation and, alas, experimentation. What was once simple martiniphilia has grown horribly into martinimania. Not only has the ratio of vermouth to gin plummeted to the infinite abyss but the new technique of quick and terrible "deep freeze" has added the menace of unpredictability. The visible melting of a lump of ice used to offer a measure of security. Don't count on it anymore; that supposed chunk of ice is actually only the solid phase of the stuff you're drinking. The gaseous phase comes later — tomorrow morning — in the cranial vault. No longer does your host say "Cheerio" or "Salud" — if he is a decent guy he intones the ancient mariner's warning "Sauve qui peut." If he doesn't he is patently subversive. Perhaps it is fitting that a Californian(2) summarizes the case for waterless martinis by saying, "It is not their strength, it's their inherent meanness."

From this sorry picture a reviewer turns to the recent contribution to medical literature of John Staige Davis, M.D.(3) with mellow delight, particularly if he shares the author's preferences "for a light, blended whiskey because of its low congenic content". If there is anything distasteful to a person seeking the medicinal benefits of beverage alcohol it's those congeners; not only distasteful — they may be positively dangerous. Who knows what the butyric and caproic series of aldehydes can do besides stink — and when you get even more carbon atoms linked in a chain — heaven only knows!

Dr. Davis makes an undeniable case for the therapeutic virtues of beverage alcohol. There will be those, including this reviewer, who recoil at the implied approval of alcohol as a dietary adjunct in cases of liver disease but maybe the author is essentially right because he is realistic. Anyway, Dr. Davis's carefully and extensively documented paper makes precious reading and is particularly recommended to members of our profession who, contrary to the

Code of Ethics of our Trade Union, continue to exploit their religious prejudices in the care of patients.

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C.L.R.

WORLD MEDICAL ASSOCIATION

ELSEWHERE in this issue, considerable material with reference to the aims, desires and hopes of the World Medical Association are outlined. Thorough consideration of the policies listed should be given by our members and support forthcoming to this relatively new organization.

ASIATIC FLU!

ARE YOU ready with plans for care of patients if this expected epidemic arrives, especially if it becomes more virulent? What about essential services: — FIRE, POLICE, PUBLIC UTILITIES, HOSPITAL PERSONNEL, HOME NURSING, ETC.?

Your state society stands ready to help through AMA and on a local level, but you, on a local level, must have plans ready to set in motion. The Red Cross has plans and stands ready and willing to help.

LET US BE AHEAD OF THE SITUATION RATHER THAN LAGGING BEHIND.

The vaccine situation will be critical until January or February of 1958. Four million cc's were said to have been available to civilians by mid September of 1957. The doctors should adopt rules of priority and publish them. The use of old A & B influenza vaccine by unscrupulous individuals is to be condemned. They are pure charlatans eager for a fast buck.

Let us educate our patients in the characteristics of the disease, especially, as yet, in the low mortality. Here is an opportunity to show the public that we can plan ahead and calm our already aroused patients.

Let us make the most of this opportunity for public service.

Carlos C. Craig, M.D., President
Arizona Medical Association.

AUTO SAFETY BELTS RECEIVE WIDE INDORSEMENT AT MEETING

WITH ONE exception, witnesses appearing before the Traffic Safety Subcommittee of the House Interstate and Foreign Commerce Committee testified they favor automobile safety belts. Indorsing the device were spokesmen for industry, Air Force, Public Health Service and American College of Surgeons.

The sole dissenter was Andrew J. White, director of a private motor vehicle research organization, who contends that a "massive plan of action" is needed to bring the entire structure of the car in line with recognized safety principles. He said: "If it is possible to select the type of accident you are going to be involved in, wear a seat belt; if not, do not wear one as it may be the cause of death or serious injury."

The industry representatives — from Ford, General Motors, Chrysler and American Motors — readily agreed the belts have obvious advantages, when properly designed, installed and worn. The Ford witness said the belts could reduce the fatalities by 50 per cent. However, none of the industry witnesses would agree with committee members that perhaps the belts should be made compulsory equipment. They said a public educational campaign was in order, but that it shouldn't be industry's role to lead the campaign. The committee is considering a bill that would require safety belts to meet certain standards set by the government.

Dr. R. Arnold Griswold, representing the College of Surgeons, indorsed the belts, "because it is best to make a compromise between maximum protection and optimum protection," in the light of slow public acceptance. He said the belt may make the most impressive record in the greater number of nonfatal injuries, where lesser force is apt to be involved.

Col. John Stapp of the Air Force's aeromedical laboratory, where research is being done on safety belts in ground vehicles, said auto accidents injure more AF personnel than any other type of accidents, and kill more than any accidents except airplane crashes. Col. Stapp personally advocated the belts, and believes they may become required equipment on AF autos and trucks.

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Topics of Current Medical Interest

HEALTH OFFICERS RECOMMEND INFLUENZA COMMISSION, PRIORITYES

STATE and Territorial Health Officers, meeting in Washington August 27-28 in a special session called by Surgeon General Burney, recommended, among other things, that U. S. Public Health Service set up a priority list for use of Asian influenza vaccine and that a national commission be appointed to deal with influenza problems.

All of the recommendations received the wholehearted endorsement of the AMA's special influenza committee, headed by Dr. Harold Lueth, which met with the larger group, then privately. Dr. Lueth's committee agreed to get out to state medical societies the information developed at the Washington meeting, and to suggest action programs. The AMA, already has a program under way to keep the profession informed.

Recommendations adopted by the State and Territorial Health Officers were divided into four general subjects, and include the following:

Research and Program Evaluation — That a national commission be appointed to "consider not only the urgent problems in connection with the current epidemic but also the long range problems associated with the behavior of the Asian and other strains of influenza virus in the population during the next decade. . . ."

Vaccination Promotion — That vaccine be allocated to states under a voluntary system, that PHS recommend to civilian physicians that they give priority in vaccinations to (a) those whose services are necessary to maintain health of community, (b) those necessary to maintain other basic services and (c) persons with tuberculosis and others who constitute a special medical risk. It was recommended that children be vaccinated, using the following doses — Three months to five years, 0.1 cc intracutaneously or subcutaneously, repeated after an interval of

one to two weeks; five to 12 years, 0.5 cc subcutaneously, repeated after an interval of one to two weeks; 13 years of age and older, the dose for adults (1.0 cc subcutaneously in a single injection). . . ." It was recommended that local committees decide what are the "basic services" for priority purposes, and also that the polio and influenza vaccination programs be continued as independent and parallel operations.

Community Planning — That the health officer must be primarily responsible for the campaign in his area, but must get the support of other groups; should estimate possible effect of epidemic and determine current or potential resources to meet problem; in cooperation with medical society outline plan for community; if there is an effectively operating health council, this should be utilized, otherwise an ad hoc committee established; opening of schools and holding of public gatherings should not be delayed or curtailed as a preventive or control measure; maximum reliance should be placed on home care for uncomplicated cases.

Disease Reporting and Epidemic Surveillance — That specimens be gathered in the first three days of illness if there is an explosive outbreak of upper respiratory conditions; in identification of outbreak, throat washings and paired sera should be submitted from at least 12 cases. That several states gather intelligence rapidly on occurrence of pneumonia often a complication of influenza. Each state to submit weekly influenza situation reports to PHS. Information should include but not be limited to symptoms and etiology, complications and mortality and age groups involved. PHS requested to prepare glossary of terms in influenza program and assist state health department virus laboratories with diagnostic materials and services of PHS epidemiological personnel when requested.

LOCUM TENES

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If interested write:
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Normal glomerulus, showing arteriole
vasculature, glomerular epithelial
podocytes, and "epitheloid" muscle
cells of vas efferens.

SEARLE

LIFE INSURANCE AS APPLIED TO THE PHYSICIAN

By John Bellows, C.L.H.

THERE is universal acceptance of life insurance as the foundation for financial planning among members of the medical profession. It is a safe statement to say that the professional man with his very complete educational background, recognizes the need and services of life insurance as much, if not more than, any other group. It is therefore a privilege to discuss some basic principles which particularly apply and are important to the physician.

We are often asked by business and professional people "How much life insurance should I own and what type should I buy?" The usual answer is that "It depends on your responsibilities, your income, your standard of living, etc." It is recognized that the financial problems faced by the medical and dental professions are in a special class. The dollar in your pocket is the same kind of dollar that is in the pocket of the merchant, the manufacturer, the farmer and the man who works for a salary — it weighs the same, bears the same markings and has identical purchasing power. However, the financial problems faced by the professional man and those faced by these others are quite different.

Your income producing values cannot exist apart from you. You cannot will these to your wife or children. According to the Secretary of the Indianapolis Medical Society it costs a young doctor about \$50,000 to hang out his shingle. Furthermore, that shingle on the average will be worth \$25,016 per year according to a recent survey. However, that income producing investment, which is specialized knowledge and skill, stops producing income the moment you stop working because most of your assets are in the head and the hands. Your office equipment, books, practice are of little value to you or your family when you can no longer use them in your profession. Thus, your capital investment is made worthless by death, incapacity, or old age. You have heard this many times, no doubt, and are fully aware of the problem.

Contrast this situation with that of the man who owns a successful wholesale or retail merchandising business. His capital consists of shelves stocked with merchandise worth thousands of dollars. He has men working for him

who can carry on in his absence so that his capital will continue to produce income for him if he is disabled or for his family if he dies. If the family or the individual wishes to sell the business, at death or retirement, the investment can usually be recovered at cost so that no loss is involved. But the very minute the professional man stops working, for whatever cause, his "invested capital" stops producing income.

It would be very strange for one physician to call in another and say to him "I want to sell my practice to you for \$100,000 and I'm sure it will be a bargain at that price. It has been paying me an annual income of \$20,000 and on a 10 per cent basis that means it is worth \$200,000. A piece of property producing \$20,000 yearly would be valued at \$400,000 on a 5 per cent basis and even at \$200,000 on a 10 per cent basis.

It is my belief that the basic value of life insurance has been and always will be the indemnification of the human asset. There is no other way for most of us to underwrite our future earnings and activity value than through life insurance. It is the only method known by which a modest outlay creates a substantial estate. This is important because it's not a question of "if you die" but "when you die."

If you are now age 35 and use the ever popular Ordinary Life policy, you can at once set up an estate of let's say \$50,000 for only \$1,320 a year or \$110 a month. Your family gets the \$50,000 even if you die one day after your plan is in force and no income tax to pay. This is equal to \$75,000 in earnings for many of you. We call this the "create and save plan" — a plan where you immediately create your estate, then save to keep it.

Contrast this with the "save and create plan" — if you take the same \$1,320 and get 2 per cent interest, *net after taxes*, and die at the end of the first year, your family would get only \$1,346. I think I can guess your reaction to 2 per cent net and the fixed dollar investment. All right, suppose we take the common stock yielding 7 per cent gross with a net of 4 per cent and an opportunity to hedge dollar depreciation, we still only have \$1,373 at the end of the first year — maybe. If you die at the end of five years (using the 2 per cent factor) your family would have only \$7,006. Suppose we go one step further and compare at the end of

20 years. The "save and create" plan would be worth \$32,713 to your family in case of death. The insured savings plan or the "create and save" plan would be worth \$50,000 plus dividends of \$14,950, or \$64,950 — almost double in estate value, and that's for 20 years.

A few people are lucky enough to inherit an estate but the rest of us must rent one or ask our families to gamble with us while we save one. Is not the "create and save" plan ideal for professional people? Because you spend years learning your skills and developing your practice, a long span of life is essential to get a fair return.

Have you ever taken the time to calculate your economic value — not what your bank account, bonds, car or home are worth but what you represent in actual "dollar value" as an income producing unit. Would you be willing to sell your future earnings to age 65 for the life insurance you own? Most doctors in their 30s will earn a half a million dollars give or take, during their years of practice and that's the life value we are talking about and must protect to the extent possible.

So far we have thought about dying too soon, but what about living too long? The current annuitant mortality table shows that the average male expectation of life at age 65 is 15.90 years, or a maximum of age 80 plus. No manufacturer with a plant worth \$100,000, \$200,000 or more would think of running his business without a "depreciation reserve." If he did he would some day find himself without funds to replace his machinery and buildings. He would be out of business — out of income. His accounting department would not let him operate one month without setting aside part of each dollar of income for depreciation.

This manufacturer has fire insurance to safeguard his plant against destruction by fire, while he builds up his depreciation reserves to replace his assets against premature destruction and adopts the principle of setting up a regular annual depreciation reserve, he cannot hope to achieve a fundamentally sound financial status. When a man accepts these basic facts, there is only one question left and that is "What kind of plan shall I use?"

Every sensible man wants his financial plan to be waterproof not only for himself but for his family. Therefore, it must meet at least three conditions:

1. It must supply an income sufficient to meet his and his family's future needs at an outlay he can afford to make today, and

2. It must free him of worry and care. No man who wishes to achieve professional success can spend hours and days worrying about financial planning, and

3. The plan must safeguard him against interruption by disability and his family against hardship if he dies too soon.

Certainly one answer to these requirements is life insurance — it guarantees *money for future delivery*.

So far it would appear that using life insurance to accomplish our objectives is the only way out but that conclusion is not intended. There are, of course, many ways of saving money and many types of property eligible for safe accumulation. There are also speculations which can be afforded by a few but unfortunately many who can't afford to lose are drawn into such risks in an effort to do it the easy, fast way.

The outstanding investment firm of Merrill, Lynch, Pierce, Fenner and Beane in one of its articles "What an Investment Firm Thinks of Life Insurance" has briefly this to say:

"Always get First Things First. Family Insurance comes first. Not just an insurance policy but an *insurance plan*, to provide for family protection, educational needs and retirement. Second, home ownership. And third, a cash reserve for emergencies."

Now that we have exposed the fact that life insurance is the foundation of a sound financial plan, our next question is "What type of life insurance?" Actually all policies are mathematically equal to each other. With the exception of term insurance, all policies provide savings if you live, or life insurance if you die. For a given deposit, you get a plan providing large savings and small life insurance or one that gives a large amount of life insurance and small savings — the savings benefit is always balanced against the death benefit. The buyer must balance his need and desire for immediate protection against his problem of retirement.

Most young professional men start out with some debts either for equipment, education, or in some cases an office building. Also, of course, their initial income is low and their family is young, yet they have a tremendous investment in themselves and a corresponding income po-

tential if all goes well. These men must be satisfied to start their life insurance program with only part of the package — the protection part. This refers to "term" insurance — covering death only — and is analogous to fire insurance. The word "term" indicates that it is temporary and does not protect for a very long period of years. With liabilities heavy and income low, the young doctor must start out by "renting" his life insurance because of the low outlay. He can, of course, compromise the issue by using one of the many combinations of permanent and term insurance. There again, the individual situation will govern.

The philosophy underlying the purchase of this kind of insurance is simply that a man knows that he won't retire much before 60 or 65 but that he does not know how many years he has left before he will die. As a result he will start out with a substantial amount of term insurance and then convert it over, without medical examination, to permanent plans as soon as possible, thus gaining both the protection and retirement advantage.

Our experience has indicated that professional men who are well established are deeply concerned about the retirement problem. Actually, all life insurance policies except "term" insurance carry a "built-in annuity clause." To make this point clear let me say it again this way. No matter what kind of permanent life insurance you purchase from any one of the leading companies, you can use it to provide yourself with a retirement income after it has served its protection purpose in capitalizing your future earning power. Every permanent kind of life insurance, even the mislabeled standby which is called *Ordinary Life*, can be converted to a life income for you or a joint life income for you and your family. No man plans to be poor at 65 — but too few make plans *not* to be.

Few people realize that the actual cost for a substantial insurance program is very little. With most plans of insurance, the interest earned on the savings part (income tax free) of the contract will cover the *cost of the protection*. One low cost company actually shows a larger cash value than net premiums paid in 20 years for even the low premium *Ordinary Life* policy, based on a projection of current dividends. With interest rates going up and mortality going down, such a projection is reasonably conservative. The above statement holds good for ages up to age

38. The higher premium types, of course, show substantial gains over premiums paid.

Now let's talk about taxes which have a way of creeping into daily conversations. Many people have never investigated the income tax advantage of life insurance as personal property. It is common knowledge, of course, that the principal proceeds of a life insurance policy are free of income tax when claimed by the beneficiary. However, suppose our widow elects some form of monthly income whether in a given amount or over a period of so many years, is there still an income tax advantage? There certainly is under Section I.I.C. Sec. 101(d) to the extent of an exclusion of \$1,000 each year of the amount otherwise determined to be taxable.

This a year is the income from \$33,333 invested at 3 per cent. Though most widows have only small income tax problems, the very reason they are small suggests the value of an income tax advantage.

Another tax advantage of life insurance is of great interest as one becomes successful and finds his tax bracket climbing from year to year. If a married man earns \$25,000 a year and takes the usual deductions, he finds himself around the 42 per cent bracket and he must consider this carefully when he makes investments that pay him immediate taxable income. Even a 4 per cent taxable yield shrinks to 2.3 per cent at the 42 per cent bracket.

The life insurance advantage is that the interest required to build up the cash value is not taxable annually. A man 35 years old can purchase types of life insurance policies which will yield a net average return to age 65 of 2 1/4 per cent with complete safety, no management problem, no publicity, scientific diversification, and no annual income tax on the gain because it compounds automatically within the life insurance policy. After all, it's the net after tax that counts.

Now that we have covered the family protection and personal retirement aspects of a life insurance contract, let's look at the third element in a balanced financial program and one of particular importance to professional people. Reference is made to the "self completing" feature or "waiver of premium clause." In the event of a prolonged illness or disabling accident, under this clause the insurance company will pay your premium for you — the full face of

when anxiety and tension "erupts" in the G. I. tract...

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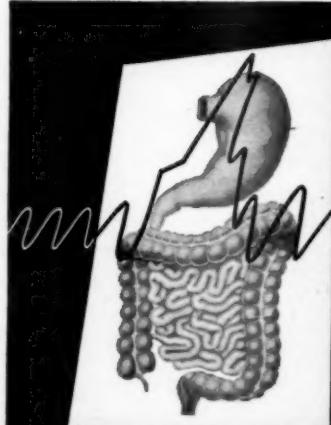
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your contract remains in force — your life insurance investment continues to increase in value — your savings continue to grow just as though you were paying the premium. Your most important asset is protected from loss at the critical time of lost earning power.

Most people learn by experience — their own or that of others. Our own experience, of course, makes the strongest impression. It has, however, one major drawback — after we learn we are wrong, it may be too late. Therefore, let us perform a financial autopsy on a group of typical physicians. The following data was the result of a study made by Charles Kingston and Associates with the complete cooperation of the Hartford (Connecticut) County Medical Association. Through the association, its obituary files from January 1, 1940 to May 1, 1953 were made available. In addition, the probate court files for Hartford County were reviewed which included 144 files. This study of 144 estates over a period of 13 years revealed the following:

ESTATES SUBJECT TO PROBATE

Gross Value	Percentage
Less than \$10,000	31.0%
\$10,001 to \$25,000	21.0%
25,001 to 50,000	15.0%
50,000 to 100,000	16.0%
100,001 to 300,000	10.0%
300,001 to 500,000	3.8%
500,001 to 1,000,000	1.6%
Over \$1,000,000	1.6%
	100.0%

The above deals with those who had estates — some 13 per cent of the doctors who died in Hartford County during the period under study had no estates. They died in debt.

AVERAGE ESTATE SETTLEMENT COSTS

Bills payable	2.6%
Funeral Expenses	1.2%
Misc. Adm. Exp.	1.3%
Other expenses (Lawyers, appraisers, etc.)	1.3%
Executor's or Administrator's Fee	2.4%
Widow's Allowance during settlement	3.5%
	12.3%

— Thus of the estates —

One-third depreciated	12.3%
Two-thirds depreciated	16.1%
The larger estates depreciated	32.9%

EARNINGS AND PREMATURE DEATH

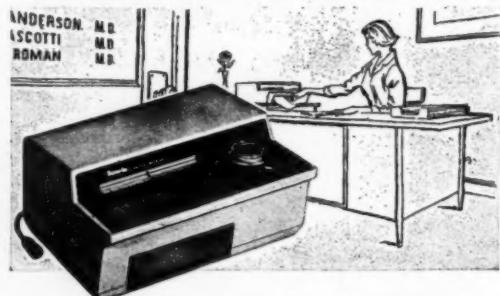
Period	Standard Mortality Table*	Hartford County M.D.'s
Age 41-50	7.7%	15.3%
Age 51-60	14.1%	11.9%
Age 61-70	23.2%	35.6%
Age 71-80	27.0%	25.4%
Age 81-90	14.1%	5.1%

*This table used by virtually all life insurance companies.

At the peak of physical manhood (41-50) doctors seem to do much better in keeping their fellow citizens alive than they do for themselves. Or as an actuary might say, "During that decade the average citizen is twice as good a risk as a physician."

Finally I would like to say that I have yet to meet one who, nearing the end of the road and looking back, said that he owned too much life insurance — but I've talked to many who earnestly wished that they owned a lot more.

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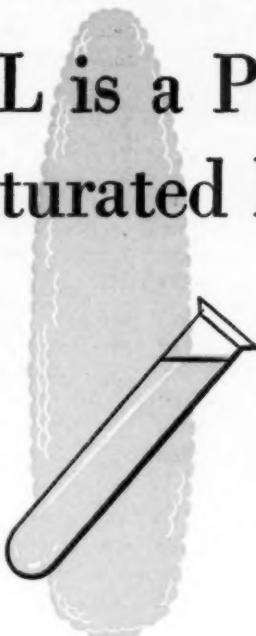
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Physicians are quite aware of the rapidly growing appreciation of the role of dietary lipids in health and disease. Accumulating metabolic studies throughout the world indicate that serum cholesterol levels may be influenced more by the *kind* than by the *amount* of the dietary fat.

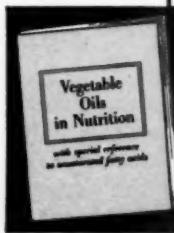
Unsaturated fats tend to depress serum cholesterol levels in many patients, whereas saturated fats may have the opposite effect. Medical references on this subject, as well as other findings concerning unsaturated fatty acids in nutrition, may be found in the book, "Vegetable Oils in Nutrition."

Mazola Corn Oil is an excellent source of *unsaturated fatty acids*...85% of its component fatty acids are unsaturated...average values being 55% linoleic acid, 30% oleic acid. Mazola is unadulterated corn oil in its natural form...*not* flavored, *not* blended, *not* hydrogenated. Well tolerated, easily digested, readily absorbed, Mazola is also an excellent carrier for fat soluble vitamins. Mazola Corn Oil is widely used for salad dressings, in frying, cooking and baking...and thus may be included palatably in great variety as a replacement for part of the daily fat intake.

Fat	Fatty Acids as Percentage of Total Acids					
	Saturated Ave.	Oleic Ave.	Linoleic Ave.	Linostearic Ave.	Arahydroic Ave.	Iodine Value
Butter	—	46-48	—	4.0	1.2	—
Coconut oil	—	75-88	—	5.8	—	—
Corn oil	13	11-15	—	23-40	56	1.0-2.5
Cottonseed oil	26	21-30	27	22-36	47	34-57
Lard	43	—	46	—	10	15.6
Linseed oil	—	6-12	—	13-31	—	10-27
Margarine	23	15-23	62	59-77	5.8	5.1-11
Olive oil	—	8-16	—	53-86	—	4-20
Peanut oil	17	14-22	54	44-65	29	20-37
Shortening	25	17-45	62	43-79	5	3-12
Soybean oil	15	11-18	25	18-58	55	28-62
Tallow (beef)	53	—	42	—	4	5.3

Iodine numbers are an accepted measure of the degree of unsaturation of vegetable oils.

TO PHYSICIANS interested in the study and management of high cholesterol blood levels, this most recent monograph will provide helpful information. It is free on request. Write to: Corn Products Refining Company, 17 Battery Place, New York 4, N. Y.



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HOW FIXED FEE SCHEDULES RESULT IN GOVERNMENT CONTROLLED MEDICINE

By James L. Doenges, M.D.

IT IS INDEED a pleasure to be with you to discuss briefly one phase of the socio-economic aspect of the practice of medicine and surgery.

In recent years considerable adverse comment has been leveled against physicians in general and especially against surgeons in the area of fees. This attack has been stimulated by a few who are utilizing every approach to discredit the practice of surgery in their attempt to stimulate public demand for government controlled and paid medical services.

The many approaches utilized by those who would destroy the free practice of medicine form an awesome, complex, but very complete picture. The problem of fees is only one, but a very important part of this subject.

Limitation of time requires that this discussion be brief and relatively general. We cannot go into detail on any part.

Much of our difficulty results from misunderstanding of accepted practices and facts as well as purposes. What can be said in regard to fixed fees for surgical services can be repeated with equal validity for every other professional service.

It is not our purpose to discuss the reason for the selection of the medical profession for criticism and destruction. However, it is interesting to consider why we were chosen instead of attorneys or some other professional group. Have you heard any serious proposals to fix fees for legal services? There are many reasons why the medical profession was chosen. Suffice to say, we, the members of the medical profession, have been chosen and we must face this fact.

To a large degree, criticism of our profession centers about fees. So much has been said against us that many of our own members have become apologists or downright cowards, fearful of stating their own true estimate of the value of their services, fearful of opposing the will of organized opposition and pressure groups, fearful of defending the basic rights of the citi-

zen, and even fearful of accepting their own responsibilities in this particular area.

These individuals have, in effect, surrendered to the opposition and have damaged the profession in so doing. It is an amazing and embarrassing sight to see members of our profession cringing before the onslaught of a few vociferous groups and planners. I AM SICK AND TIRED OF MEDICAL APOLOGISTS.

It seems these men have forgotten one fact, the most important single fact in this fight for the freedom of medicine. *Only doctors can deliver medical services.* I repeat, ONLY DOCTORS CAN DELIVER MEDICAL SERVICES. The AFL-CIO, Department of Health, Education and Welfare, the county, state or federal government, the United Mine Workers Association — none of these nor all of them combined, can perform one operation. ONLY DOCTORS CAN DELIVER THESE SERVICES!

In spite of this fact, we have moved a long way along the path of controlled practice. We can blame no one but ourselves. We have permitted it to happen.

At present we are faced with a very serious problem, that of fixed fees. Some, for lack of understanding or appreciation of the plan behind fixed fees, have approved. Others feel fixed fee schedules are a means of delaying the day of government medicine. Others like the idea because it is, to a certain degree, advantageous to them and assures an income — at present. Others simply lack the courage to oppose the plan.

What are fixed fee schedules? Let me state that I do not intend to imply that fixed fee schedules are the only road to government medicine. They are not, but they are an integral, in fact an indispensable, factor in all such programs.

Likewise, it should be understood that fixed fee schedules do not result inevitably in government medicine. It is not essential that they do. However, when accepted by large groups, they always imply and comprise acceptance of one of the essential features of all government medical programs.

Government medicine is no more inevitable as the result of the acceptance of fixed fee schedules than is total socialism—an inevitable result of the acceptance by the people of a nation of the nationalization of one segment of

the economy. In both instances the worst is not inevitable, but history provides no important example of the exception.

There are many of us, in fact I believe almost every member of the profession, who desire to be free. Why, then, do we accept these controls? If we are to remain free, we must know the enemy and his plans.

The importance of fixed fee schedules is not well understood. In the first place, most of us practice under a modification of the fixed fee system for office calls as well as most surgical procedures. These fees have been arrived at, in most cases, without agreements, consultations, or even discussion with other practitioners. However, they constitute fees usually acceptable to both the patient and the physician. Note this point for it is the most important single feature of such agreements. Fees, although ordinarily approximately the same, are agreed upon by the physician and his individual patient.

Just what constitutes a "fixed fee schedule"? Such a schedule may be established by one physician or any number of physicians. In the final analysis, a fixed fee schedule is merely a catalog of procedures with a price stated for each. It is no more. It can be no more.

This is a relatively innocuous matter. It becomes obnoxious and dangerous the minute it becomes a point of bargaining, the minute the establishment of the schedule leaves the hand of the individual physician and his individual patient. The danger lies not in the schedule itself, but in the fact that a third party has entered the picture.

The third party may be another physician, an associate, or a group of physicians or hospital staff, a county society, state society, or a national society. It may be a political unit at local, county, state, or national level. It may be a non-political "pressure group," or any organization to which, though unilaterality of law a portion of the police power has been granted. The most vociferous and obvious example of the latter is the present day labor union.

Much has been said in recent years to indicate a disapproval of and repudiation of the importance of the individual patient-physician relationship. Some groups, especially pressure groups, have repeatedly publicized opinions which imply that the patient receives poor care if he is permitted to choose his own physician. They also indicate that the patient-physician

relationship is outmoded and that it is of no importance. They also attempt to eliminate the importance of the individual patient-physician relationship in the area of fees.

There are many of us who believe that the individual patient-physician relationship is all important. The importance of this relationship does not require detailed discussion here. Suffice to say, this intimate and individual relationship must exist in every area if the practice of medicine is to continue at the high moral and intellectual level which has characterized it through the years.

As soon as a third party enters the picture, regardless of the area, the destruction of the free practice of medicine is underway.

Attempts to interfere with the actual practice of medicine have been fewer and less noticeable although far too extensive and far too common, than in the area of fees. The reason for this is obvious.

Too many physicians have accepted third party interference with their practices. Control is control, and it matters not who exercises this control. The fact of control remains unchanged. A group of physicians can be just as unfair as a group of government officials. A group of physicians can be just as dictatorial as can a group of union officials.

Many physicians believe that anything they accept without some agency issuing a regulation or without a law, constitutes a "voluntary" act. The word "voluntary" is so badly abused that it has lost much of its meaning to many. Many accept programs they would not accept otherwise because the word "voluntary" is used. Many believe that if a group of physicians constitutes the third party the element of control is eliminated.

There are numerous areas in which fixed fee schedules (one example of control) are in operation. Schedules for care of veterans at the local level are accompanied by fixed fee schedules. These schedules are a perfect example of control. Regardless of how the schedules were determined, they are rigidly fixed, and so rigidly controlled that any participating physician is subject to considerable legal difficulty if his charges exceed the schedule.

Workmen's compensation laws establish fixed fees for services in many areas. There are many similar examples such as contract agreements between individual physicians or groups or phy-

sicians and private industries or insurance companies to render services for fixed fees.

It is important to note that in every area in which the government "pays" for medical service, the fee is fixed. Granted, this may be achieved through so-called negotiations with some medical group, but it does not eliminate the fact that the fee is fixed and is fixed by a third party, usually the governmental agency. This is true of welfare, township, vocational rehabilitation, and every other program of similar nature.

However, the area in which the idea of fixed fees has received greatest acceptance is, on a purely numerical basis, in the field of so-called "health" insurance.

Many physicians have accepted fixed fees in this area because they are over-awed by the idea that it is "voluntary" and they believe that the fees are determined by physicians on a "voluntary" basis. Note the all important fact that in such an agreement the negotiation of a fee always involves a third party. Even if it were another physician, it would still be a third party. It is not the individual physician rendering the service to the individual patient. Herein lies the seed of our destruction. Insurance programs cover more millions of people than do any of the other fixed fee programs. Efforts are being made to force all of these programs, especially the "mutuals," into service plans. Similar pressure is being exerted by some private insurance companies and being demanded by so-called "welfare" programs of unions and other groups. Recently an example of the importance of the fixed fee schedule in the establishment of government medicine became apparent in negotiations on the "Medicare" program. One point which every physician should observe with keenest apprehension is that this program was supplied by the government but paid through private or mutual insurance companies.

Let us observe a few of the legal features common to all of these so-called insurance programs. Many physicians do not realize that if their state society enters into an agreement with a division of the federal government, although this does not commit the individual physician to any act, it does establish a contract. Regardless of whether it is the Medicare program or the home town treatment program of the Veterans' Administration, the physician is regarded

as having entered into a contract with the government under the terms established by the state medical society or negotiating unit, as long as he accepts a patient under one of these programs. As soon as the physician files the papers for rendering services under any of these programs, he has, in effect, signed a contract with the government to deliver services under the terms of the general contract. In short, he has agreed to practice government medicine in this particular case. He is subject to considerable legal difficulty provided his fees exceed those established in the contract.

You are well acquainted with the fact that under the welfare programs of the various political units a charge in excess of that allowed by the agency cannot be collected legally. All of the so-called "welfare" programs, such as those of the United Mine Workers, require that physicians agree to accept the fees fixed by third parties for their services.

Even in the indemnity programs an enormous element of control is exerted over the physician. In many of these programs, the physician is required to state his fee, in spite of the fact that the companies have a stated allowance for stated services. This does not constitute a fixed fee, since there is no agreement on this matter. However, the patient has paid a premium calculated to allow the benefits scheduled for the procedure. In cases in which the physician does not care to make his charge as high as the allowance, an additional legal complication arises. Remember, the patient has paid a premium sufficient to entitle him to the listed benefits. If the physician's charge is lower, the patient does not receive the additional amount. If either the patient or physician indicates a higher fee to the insurance company he is liable to legal action for fraud. This indicated how control creeps into every facet of the economic area of the practice of medicine under any of these programs.

It is interesting to follow the methods by which so-called health insurance has been utilized to bring about the control of the medical profession and how it is being utilized to further the intrusion of government into the practice of medicine. The history of insurance of this type provides an example of this progression.

Originally, health insurance was written on the basis of a contract between the patient and

the insurance company. Such contracts did not involve the physician at all. The patient purchased a contract which provided certain amounts of money under stated circumstances. The patient reported the incident to the company and received that amount of his contract payment.

The difficulties encountered under these contracts caused many important changes. Large numbers of insurance companies sprang up. In Europe they were called "Friendly Societies." In the United States the position of the friendly society was occupied by the fraternal organizations and many small "mutual" companies. Here, as previously, the insurance contract existed between the patient and the insurance company. However, the groups or companies began requiring reporting or certification by the physician. This seemed a very innocuous matter, but here again, the third party entered the picture.

Many organizations found it more convenient to employ physicians, under contract, to render services to their members or subscribers at a fixed fee or on a "per capita" basis. Such contracts are offered by many groups today to almost any physician who will accept them.

Under the original concept of these programs the benefits were still paid to the patient and were not made payable to the physician. Some find it difficult to understand the importance of this particular move, but let us observe that at this point in the history of health insurance, **THE PHYSICIAN BEGAN ACCEPTING A THIRD PARTY** in the patient-physician relationship by reporting or certifying an illness of a patient to someone other than the patient himself. *This began the "voluntary" deterioration of and destruction of the confidential nature of the patient-physician relationship.*

It was only natural that such programs should be subjected to many abuses. One of these soon became obvious and distasteful to the contract physician. The patient received the benefits to which he was entitled but failed to pay his physician's fees. The physician felt he was entitled to his fees and held that the various companies had a responsibility to him because he had accepted the company as a third party in supplying it with information and therefore regarded the company as somewhat responsible for the "proper use" of the benefits which were obtained by the patient. At this point physicians began looking to the third party in one area of

responsibility. This argument was enhanced by acceptance of the idea that the patient purchased the insurance for the sole purpose of providing funds to meet medical difficulties. These facts, combined with many others, led to the acceptance of the idea of making the benefits assignable to the physician rendering the services, or of making the benefits payable to the physician and the patient jointly.

It is all important to note that all of these contracts are entered into by the patient with the company, and that the physician has absolutely no part of this agreement. The physician has no moral right to require that the benefits be paid to him. He did not pay the premium, he did not enter into the contract in any way, and from a moral point of view, he has no right to have his name on the check. The benefits properly belong to the patient, not to the doctor.

However, the most important part of this entire procedure centers about the unrealized fact that such procedures encourage the patient to begin to divorce himself from a sense of personal responsibility to his physician. This divorce of the responsibility of the patient to discharge his financial obligations to his physician is one of the most important elements in the destruction of the patient-physician relationship. It encourages the patient to believe that someone else, in this case the insurance company, is responsible for his financial obligations. Having accepted the principle that someone else may rightly assume this responsibility, it becomes a matter of indifference to the patient — and eventually to the physician, who assumes this responsibility. The door is open for government intervention.

There may be those who will minimize the importance of the step but there are many of us who feel that the socialization of the nation and government control of the practice of medicine cannot exist if individual responsibility is realized and accepted in all areas.

As a result of the above, and as concrete evidence of the deterioration and destruction of the patient's sense of responsibility and of his desire to be relieved of all responsibility, we need only observe the growth of the idea that patients should be able to purchase insurance which would cover their obligations and responsibilities in full.

One hears practically nothing about complete coverage for loss to natural forces for personal

property. Total coverage in most areas is not available except at prohibitive rates and is even discouraged by agents and companies alike.

Factually, total coverage in any field is almost universally accepted as impractical, too expensive, unnecessary, and most unrealistic!

Why then the demand for total coverage in the field of "health"? The answer is provided by the writings and actions of those who would destroy all freedom. The fixed fee schedule is one of the most important parts of their plan to establish this type of government medicine and reduce all professional men to the level of salaried or hourly rated employees of one agency or another.

The field of medicine is utilized rather than any other field because of the enormous emotional appeal and the almost universal experience of need or desire in this area! In no other area can such an appeal be cultivated.

The idea of complete coverage is of greatest importance. In recent years, an ever increasing cry has been heard for complete medical services for all — for a fixed fee. Here again, the importance of the "fixed fee" is paramount.

One cannot help but wonder how it came to pass that in this one area — that of medical and surgical care and hospital expenses, a demand that *all* expenses should be covered for a single fee has become evident. A study of the history of the progress of socialism answers all questions on this subject.

It is not an accident that such unreasonable "demands" are presented. It is part of the plan to destroy all freedom, not just freedom in the practice of medicine — but the freedom of every segment of the economy.

The socialists have recognized this fact for many years, and have utilized it with telling results. Please remember that they now describe health as a "right." This thing called "health" is defined as — "The state of complete physical, mental and social well being and not just the absence of disease or infirmity." (WHO)

All of this is due to everyone as a right. All of this is something everyone has coming in equal quantity and quality. Does it not follow that something so universally "due" to all should be supplied to all either "free" or at least at a set fee?

The writings of the socialists describe the process in detail. Read them — and see how American medicine has followed their lead —

just as the sheep follow the "Judas" goat. The slaughter of medicine as a market economy phenomenon is just around the corner.

Under all of these plans, the mutual and personal responsibility of patient and physician is lost!

A natural consequence of this deterioration of the sense of responsibility and of the growing idea that someone else should be responsible, encouraged many, especially pressure groups, to contend that variation in fees produced insurmountable difficulties. It became a source of irritation to find that the fees allowed, when the patient visited one physician, completely relieved him of his responsibility, but when he visited another physician did not quite achieve this end. This added fuel to the fire and the idea of fixing fees or of establishing fee schedules came into greater prominence.

Such programs permitted insurance companies to calculate their loss on a more accurate basis. It also permitted groups and individuals to secure coverage which could be calculated in advance as being complete coverage. It becomes obvious that once such a fee schedule is accepted a logical consequence should be to require, by one means or another, that physicians agree to accept those schedules as payment in full for their services.

It should be emphasized that the amount of the fee is of no importance. At the point where the physician accepts such an agreement, he joins his patient in his flight from personal responsibility and accepts the idea that a third party is not only responsible for the payment of his patient's bills but that a third party is likewise entitled to establish his fees. Here again, this may seem a minor point to some. However, it is most destructive to the free practice of medicine. No physician can relinquish his personal responsibility in the area of fees to a third party and continue to practice medicine in the same moral climate he occupied previously. This matter of moral and mutual responsibility between patient and physician is all important.

The brief argument which has been presented has essentially been in "reverse." It has been easy to emphasize the fact that no government medical program operates without a fixed fee schedule. This is self evident. It cannot be otherwise.

The converse is more difficult to prove since,

actually, it is possible to have fixed fee schedules without having government medicine! Our intention was not to prove that it was inevitable, but to show how it did — and almost always does — result.

The most important part of the discussion has been minimized. That part is you — the physician. The role of the physician is all important. Let us look at some of the effects of acceptance of fixed fees on physicians.

All "fixed fee" programs, short of complete government medicine, require that those who participate be known to the patients. Any moral physician should look seriously to his ideas of ethics when he consents to have his name appear on listings as a participating physician.

All fixed fee programs imply that illness can be standardized. All physicians realize that this is impossible. The individual variations arising as diagnostic requirements, utilization of time, development of complications, the system of treatment, the response to treatment, the severity of the case and innumerable other factors, all too well known to you, immediately prove the fallacy of the idea of standardization of illness. All medical teaching and tradition repudiates this idea since it has always been accepted that every patient is and must be regarded as an individual, that his problems are singular and that he must be dealt with accordingly.

Fixed fee programs indicate that physicians can be and are standardized and that they are of equal competence or ability. They imply to the general public that all doctors are equal in training and knowledge and that their personalities are the same. They imply that there is no difference in judgment, in the techniques utilized, in the abilities, results obtained, and that no important difference exists in every other portion of the personal care of the patient. It simply states, by implication to the patient, that his doctor is no better than the next. This damages the patient's confidence in his personal physician.

Such ideas, imply acceptance of the false claims of those who relegate medicine to a mechanical matter, that physicians are tradesmen peddling a service or product which is not worthy of individual evaluation.

Strictly from a moral and historical basis, we should remember St. Luke, physician and patron saint of physicians, who, almost 2,000 years ago enunciated the principle that "A laborer is

worthy of his hire." (Luke 10:7). Not only in the field of medicine but in every area, history is replete with the failures resulting from the rejection of this principle. Repudiation of this basic precept is the heart of the entire system of socialism and it is the aim and purpose of fixed fee schedules.

When one attempts to divorce worth from hire, he is following the socialistic pattern and those who would substitute seniority, need and rights, for responsibilities, efficiency, and initiative are falling into a dangerous position. The conscientious moral physician is the one individual who should espouse and live by St. Luke's principle. It is elementary, unalterably and forever opposed to such practices in the field of medicine, and understanding of this principle illuminates these *plans* for what they are.

There is another moral question dealing with the separation of a service from its proper frame of reference. This procedure disguises its true comparative value and is as dishonest as it is to artificially manipulate prices and provide subsidies to hide from the people the true value of goods they buy and sell.

To establish a fixed price for service, basing this price on a technical procedure demanded by the service, completely prostitutes the idea of responsibility. In fact, it denounces or indicates nonexistence of any convertible value of moral responsibility assumed and discharged. If it were possible, it would be more realistic to attempt to place a price on the amount of personal responsibility accepted and to disregard the minor mechanical features. Giving simple medication under certain circumstances entails assumption of responsibility as great as the performance of certain major surgical procedures.

We have discussed the mechanism by which fixed fee schedules result in government medicine by pointing out the fact that none of these programs can operate without a fixed fee schedule. As indicated at first, it is not inevitable that the fixed fee schedule should result in government medicine. The fact that it is a necessary component of government medicine does not of necessity make it a forerunner to government medicine. However, the acceptance of fixed fee schedules in these areas result in the climate which does result in government medicine. This climate is established by the fact that those companies proposing and sponsoring fixed fee schedules and service plans, cover a high per-

centage of the entire population. They are attempting even by utilizing certain unfair means of competition, to cover an ever increasing and greater segment of the population. They are attempting to enter into contracts with the federal government to provide this type of program for all federal employees.

One point many do not realize is that there comes a time when insurance is not profitable to the policy holders. This may be somewhat of a surprise to many, but we must realize that when an entire population or political subdivision is completely included in such a program, especially if a fixed fee schedule is in operation, there ceases to exist any reason for the existence of the insurance company. At this point the brokerage fee of the company can be eliminated or at least transferred to the political unit, as the entire program has become one equivalent to that of government taxing all to provide services for all. We need only view the implications of present acts of our government to see how this operates.

We must admit that our government, having secured a fixed fee schedule or service plan program for special groups, such as the dependents of military personnel, veterans, certain social security beneficiaries, and others, will naturally attempt to extend such benefits into other areas. At present there are a number of proposals in congress to do this very thing. Bills are pending which would entitle any individual **ELIGIBLE FOR** social security benefits to hospital and medical care at "government" expense. This need only be extended to

include civil servants and another large segment of the population will be receiving "government" medical care. Proposals will then be made to provide similar services for all veterans, later for their dependents. We need go no further. It becomes obvious that at this point the need for private insurance will cease to exist and government medicine in its most hideous form will become a reality.

In the final analysis, the most important factor which produces government medicine through the mechanism of fixed fee schedules exists through and results from the alteration in the area of mutual responsibility between patient and physician. As physicians we can do much to encourage our patients to accept their own responsibilities. However, as physicians, if we accept the intervention of a third party in the patient-physician relation in any area, we are eliminating part of our personal responsibility to the patient. In the areas of fees, through the mechanism of fixed fees or service plans, the temptation seems overwhelming to many — few are willing to examine the processes closely to see the ultimate results.

Our only hope to retain freedom in the practice of our profession is to reawaken our fellow physicians and help them see the loss we face if we abandon principles.

If we maintain the individual patient-physician relationship regardless of personal sacrifices and difficulties, we will not only save medicine — but we will save our beloved nation from the destruction which has been planned by those WHO HATE FREEDOM!

THE JENKINS-KEOGH BILLS a pension plan for SELF-EMPLOYED INDIVIDUALS

THE CURRENT session of congress now has before it two identical bills (HR 9 and 10) which would allow self-employed persons an income tax deduction for limited amounts placed in a retirement fund. Similar legislation has been introduced in every session of congress since 1951, but, unlike its predecessors, the present bills contain provisions generally acceptable to the life insurance industry.

While these bills are likely to be laid to rest in graves beside those of their ancestors, it is generally conceded that these newcomers have

a better chance for survival. The American Bar Association, American Medical Association, American Dental Association, American Institute of Accountants and other similar groups have formed the "American Thrift Assembly for 10 Million Self-Employed" to promote the enactment of this legislation by congress.

Because of this intensified promotion, and the general interest that many of our readers have shown we have prepared the following outline of the pertinent provisions of these bills.

I. WHO IS ELIGIBLE?

A. Any self-employed individual who meets the following:

B. Tests

1. Must be subject to self-employment tax or

would be subject to it except for exemption as

- doctor
- voluntary exclusion of a minister

2. And is not a participant in

- qualified pension or profit sharing plan, or
- pension plan established by a governmental body or one of its instrumentalities, or
- pension plan established pursuant to I.R.C. Sec. 501(c)(3) (non-profit organizations)

II. HOW MUCH CAN THE INDIVIDUAL DEDUCT FROM GROSS INCOME?

A. If under 50 years of age on January 1, 1957

- 10 per cent of net earnings from self employment, or
- \$5,000, *whichever is less*

B. If over 50 years of age on January 1, 1957

- Amount as computed in A above, *plus*
- 10 per cent for each full year age is in excess of 50 but not in excess of 70

C. Provided these amounts are set aside during the taxable year (or within 4½ months thereafter)

D. Maximum deduction — \$100,000 during lifetime

III. WHERE MUST THESE FUNDS BE DEPOSITED? TWO METHODS

A. In a restricted retirement fund

- Funds must be administered by trustee or custodian
 - incorporated bank subject to supervision and examination under laws of U. S., state, or territory
 - for income tax purposes custodian treated as a trust
 - tax-exempt under I.R.C. Sec. 501(a)
 - subject to I.R.C. Sec. 511 (tax on unrelated business income)
- Trust or custodianship must be created in writing and expressly
 - prohibit use of funds to pay premiums on restricted retirement policy containing life insurance protection unless insured pays that portion of the premium attributable to protection
 - provide that trustee or custodian cannot exercise extended term non-forfeiture option on restricted retirement policy

c. provide that trustee or custodian will return any contribution to participant which is in excess of his allowable deduction

d. provide that trust or account is for exclusive benefit of participating self-employed members

3. Trustee or custodian may invest funds in

- surrender value of restricted retirement policy on life of individual, or
- stock or securities listed on recognized exchanges, except in corporation that a member of retirement fund owns more than 10 per cent of the voting stock (attribution rules of I.R.C. Sec. 318 apply), or
- U. S., state, territorial, or municipal bonds and other evidences of indebtedness, or
- stock in a regulated investment company meeting the requirements of I.R.C. Sec. 851

4. Participant's interest must be unassignable, except

- may be given right to designate death beneficiaries, and
- may be given right to transfer death to a similar trustee or custodian

B. In a restricted retirement policy issued by a life insurance company

- May be annuity, endowment, life contract, or any combination (except term)
 - on life of the self-employed individual
 - who must have all ownership rights
- Policy must be endorsed to show
 - it is a restricted retirement policy, and it is
 - non-assignable
 - may be new or old policy
- Portion of premium allocable to cost of the life insurance protection not deductible
 - presumably, full deduction when
 - annual increase in cash value equals or exceeds annual premium paid

IV. HOW ARE AMOUNTS DISTRIBUTED FROM RESTRICTED RETIREMENT FUND TAXED?

A. If received by individual after age 65

- Payments included in gross income in year received
- If entire amount received in one taxable year — tax is
 - Five times the increase in tax that would have resulted from including 1/5 of the distribution in gross income

- b. if funds have not accumulated for at least five years before distribution the entire amount is included in gross income
- B. If received by individual before age 65
 - 1. Tax is 110 per cent of the total taxes which would have been paid had the amount been received rateably over taxable year and the four preceding years
 - 2. This is a penalty on early withdrawal
- C. If received by death beneficiary
 - 1. Payments included in gross income in year received
 - 2. If entire amount received in one year the 1/5 averaging rule applies (see IV,A,2,a above)
- D. Distribution of unrestricted retirement policy not taxed until payments received under policy (see below)
- V. HOW ARE AMOUNTS RECEIVED UNDER RETIREMENT POLICY TAXED?
 - A. In general, installment payments are taxed under I.R.C. Sec. 72 as an annuity
 - 1. Three year spread-out rule of I.R.C. Sec. 72 does not apply
 - 2. In computing exclusion ratio premiums deducted not considered as part of investment in contract
 - 3. Surviving *annuitant* taxed in same manner
 - B. If full amount received in one year after age 65 the 1/5 averaging rule applies (see IV, A,2,a above)
 - C. If received by individual before age 65 the 110 per cent rule applies (see IV,B, above)
 - D. Policy loans considered as payment except
 - 1. Where loan does not exceed one annual premium, and
 - 2. Is repaid within 12 months after premium due date, thus
 - 3. Automatic premium loans protected
 - E. If non-forfeiture option, other than reduced paid-up insurance, becomes operative the individual is deemed to have received payment equal to cash value accumulated since policy was endorsed
 - F. Death proceeds includable in beneficiary's gross income as received
 - 1. Except portion attributable to premiums paid before policy endorsed as restrictive retirement policy, and
 - 2. Except portion attributable to amount at risk (face less cash value at date of death)
 - 3. If all proceeds are received in one taxable year the 1/5 averaging rule applies (see IV, A,2,a above).

20 MEDICAL SCHOOLS IN LINE FOR MENDS PROGRAM OF DEFENSE DEPARTMENT

TWENTY additional medical schools have applied to participate in the medical education for national defense (MEND) program sponsored by the defense department. Under it, faculty members of participating schools are indoctrinated in military and disaster medicine through symposia and other means being developed by the armed services. Courses, in turn, are offered students. According to Assistant Defense Secretary Frank Berry, 10 schools will be picked from among the 20 early in June. This will bring to 45 the number of schools offering special courses.

At a press conference, Dr. Berry also noted a "sharp" decrease in the number of resignations from the medical branches of the armed services. He attributed this to the passage last year of the career incentive act, which provides for additional pay for doctors serving beyond

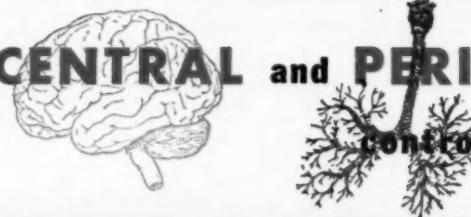
two years and also gives them additional credit toward promotions and retirement. There are enough physicians now commissioned or committed to service to take care of the military's needs for the next fiscal year without having to draft any doctors, he said.

He also reported on the success of a defense mutual aid program in which teams go to foreign countries to help troops of our allies improve their nutrition. Five surveys have been completed (Iran, Pakistan, Korea, Philippines and Turkey) and one is to start in Libya in June.

* * *

Senator Neuberger, who along with Senator Morse has sponsored an amendment to the HEW appropriation, urged that \$500 million be approved for cancer research without a time limit on spending. The two Oregon Democrats want the government to attack the problem on a "crash" basis like the atomic bomb development. The administration asked and the house approved \$46,902,000 for the National Cancer Institute for the 12 months starting July 1.

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By Guillermo Osler, M.D.

WE wish to repeat a belief and suggestion which seems to carry more and more weight as the years go by, — "Without exception patients who have asthma or emphysema SHOULD NOT SMOKE ANYTHING in ANY AMOUNT at ANY TIME." . . . Peters and Prickman ('Minnesota Medicine' for February 1957) are the most recent authors to stress that credo, and the newest members of the group which smokers will either dislike or ignore.

There has been a shift from dicumarol to another type of ANTICOAGULANT in the practice of a few of our internist friends. They use a brand of Marfarin, made by Endo Lab., and called 'Coumadin'. . . . It acts as a HYPOPROTHROMBINEMA-INDUCING AGENT, is more potent, is said to be more predictable, and the effects are achieved in 24 hours and last 3 to 5 days. It may be given once a day, and by oral or hypodermic portals. . . . The discoverer of the injectable anticoagulants was Karl Link of Wisconsin; he has a branch of his family in Tucson; and he doesn't have to worry whether one drug supersedes the other, since he invented both of them.

A logical further use of ANTICOAGULANTS has been announced by Millikan of the Mayo Clinic. He and his colleagues (Sieker and Whisenant) believe that oral or IV anticoagulants can be used for FOUR VASCULAR CONDITIONS, — intermittent insufficiency in the vertebral basilar system with infarction; and actively advancing occlusion of the carotid system. . . . Dr. Wright of Cornell suggested a fifth category, multiple thrombo-embolic episodes. . . . A small point of uncertainty is the diagnosis of some of these conditions by some of us barefoot country docs.

The 'Scope Weekly' (which we suspect is connected with Upjohn's, since it contains no other advertisements,) has MENTIONED ANOTHER ARIZONAN in its 'Questions for Doctors — and Answers'. DR. JOHN L. COGLAND, internist of Phoenix, was asked "what characteristics do you think are most important in an individual who wants to enter the medical profession?" . . . Dr. Cogland gave the usual answers about physical and intellectual capacity for sustained effort, finances, etc., but added that a potential doctor must have an acquired characteristic, THE SINCERE DESIRE TO BECOME A GOOD DOCTOR.

Meniere's syndrome has another therapeutic approach, this time a combination by Roerig & Co.

It is called 'Antivert', and it can be used for other forms of vertigo. . . . The 'combo' includes the antihistaminic and anticholinergic actions of meclizine and the vasodilating action of nicotinic acid.

The supreme example of a mystery-type, hard-to-get approach in describing a new drug has just been 'released' by the Olin Mathieson Chemical Corp., by way of its E. R. Squibb & Sons Division. . . . They tell about "A NEW STEROID AGENT" which "may prove to be palliative in certain cases of cancer." . . . They do not say what type of cancer cases may be affected; they don't say when the drug will be 'released' and they don't even give the name of the drug!

A summary of the principles and practice of HYPOTHERMIA as an adjunct to anaesthesia in cardiovascular surgery was published in this column last year. We now hear of its use in another field, tho not yet reported. . . . Certain lung lesions require surgery, but are accompanied by hypoxemia due to associated lung damage. 'Cooling' cuts the metabolism, and the need for oxygen, and can occasionally make the surgery safer. . . . We know of two chest surgeons who have used the method in cases of carcinoma and TB with emphysema. Worked out fine.

Here is a STRANGE CLINICAL RELATIONSHIP to which we wouldn't pay much attention except that the basic condition is becoming more common, and since we have just seen such a combination. . . . Plotkin, in "Disease of the Chest," urges that we become aware of the MALFUNCTION OF AN ORGAN WHICH IS NOT THE ONE PRIMARILY INVOLVED! He refers to involvement of the GASTROINTESTINAL TRACT in cases of PULMONARY EMPHYSEMA with cor pulmonale. . . . The condition is a strange one, since the usual pattern of 'pain, food-intake relief' does not exist. Small 'silent' ulcers are silent, and even large penetrating ones are atypical. . . . Of 65 autopsied cases of emphysema with right heart disease, 10 had gastric, 11 had duodenal ulcers, and 6 had hypertrophic gastritis. Another series studies by x-ray had a 30 per cent incidence of peptic ulcer. . . . The case we have just seen had pain, but no relief from therapy. We were inclined to blame a previous use of steroid therapy but Dr. Plotkin does not mention such a relationship. We'll have to drop him a query.

Upjohn is advertising 'Halotestin' as a methyl-testosterone with a halogen (fluoro) attachment. It is said to lack the toxic edema & jaundice ef-

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fects of other androgens (tho we think it may be early to guarantee it). It is usable by mouth, and is said to be five times more potent than other oral androgens. . . . Maybe this is progress?

The oddest variant of the original 'Blood Bank' has just been described. At the Central Laboratories of the Imperial Cancer Research Fund (London) there is a FROZEN-TUMOR BANK! . . . It is necessary to have a ready supply of blood, bones, arteries, corneas, etc., but few people think of the need for experimental stock tumors. They have about 50 kinds of transplantable tumors, almost all of which are from animal and fowl sources. . . . The only similar kind of bank is one which keeps bacterial strains, but in incubators. Steenken, at Saranac Lake, has a bank of acid-fast bacilli for the National Tuberculosis Association. . . . It isn't so odd when the basic idea is considered.

There has been a great deal of worry in the public prints about HOW MUCH RADIATION a person gets, and can stand. Most of the non-medical items we have seen were indefinite trash. Most of the medical speeches and papers have been of a similar sort. I'm sure that someone will 'wrap it up' soon. . . . One angle which may or may not be practical is the suggestion of Dr. Poppel, chief radiologist of N.Y.U. & Bellevue. He believes that everyone should keep a 'LIFETIME DIARY OF RADIATION'. This would require a nationally-standardized radiation diary system. . . . It seems hard to believe that human beings who can't remember if they have had measles or vaccinations would keep diaries in any numbers. Some people who are versatile and methodical MIGHT have a radiation diary, a past medical history diary, a food and drug reaction diary, a menstrual diary, as well as the ordinary social and political diaries.

E. H. Fell, a Chicago surgeon, writes of 'THE OPEN AIRWAY' in the Jour. Mich. State Med. Soc. He urges that every physician, regardless of specialty, should think of the need for an open passage for an exchange of gases. The ill effects of obstruction can be shown by a simple experiment on animals. . . . We have meant to mention the increasing use of TRACHEOTOMY by certain surgeons. It is done as an elective procedure, sometimes as an adjunct to hypothermia, and allowing the surgical team to keep the bronchi clear in the first post-op hours, and even days.

A mean old M.D. from Virginia (G. J. Boines) has made up a list of 'Mis-conceptions in Poliomyelitis.' It includes one set of comparisons which we haven't ever seen. . . . Under the heading: 'It is an erroneous belief that poliomyelitis is the most crippling of diseases,' it states that for every polio

patient needing help there are 160 with heart disease, 75 with arthritis and rheumatism, 25 with mental disease, 7 with cancer, 6 with cerebral palsy, 4 with TB, 2 with multiple sclerosis, and 2 with muscular dystrophy. . . . We think there are probably modifying factors, — polio is acute; some of the others are not very debilitating; TB is infectious; etc.

YOUR FAMILY HEALTH RECORD

Copies of "Your Family Health Record" are available to the membership on receipt of request therefor. They may be ordered individually or by the component county medical society, from the central office, Arizona Medical Association.

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Announcement

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The new Preferred Surgical Plan offered by HBA pays one-and-a-half times the surgical fees offered by the Standard Surgical Plan.

This also means that the fees for the anesthetist are increased in the same proportion.

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Many of your patients may ask for your advice. We, therefore, believe that this information would be of interest to you.

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Organization Page

CIVICS

By Norman A. Ross, M.D.

"COMPREHENSIVE" INSURANCE

THE FASTEST GROWING HEALTH INSURANCE TODAY.

(Medical Economics, July, 1957)

THE DOCTOR isn't bound by a fee schedule and the patient pays part of major bills under the kind of policy the industry calls "comprehensive." By Hugh C. Sherwood.

Does this conflict with Blue Shield philosophy and direction?

"* * * Executive Director, Connecticut Blue Shield — deductible and co-insurance — are seriously limiting their control over medical costs * * *." The payment of "going rates" puts medical care in the constant upward inflationary spiral * * *."

Does this medical economic advisor, in actuality a medical comptroller, propose to affect appreciably national inflation by reducing the physicians' purchasing power — in this area of medical practice — in the State of Connecticut, or, for that matter, with the cooperation of his fellows, in the entire United States?

We are sure this is not the case and that this man is speaking only in terms of obtaining the lowest possible rate for *his* subscribers. We are satisfied that he would agree, and that it is generally accepted as fact, that reducing physicians to lower and lower economic levels can only lead to poorer and poorer medical care — to government subsidy to protect patient and physician, and to the eventual inclusion of all physicians and all patients in a national medical program — in the national interest.

It is common knowledge that our national economy has been in an inflationary spiral since the birth of this nation. The *annual national inflationary rate has been 3 per cent per annum* for the past 50 years.

Comprehensive, deductible, or by whatever name this "fastest growing health insurance" is called, shows that medicine can breathe a sigh

of relief for the intentions of those who design and those who purchase this policy. They do not propose that "going rates" are overpayments to their physicians.

MORE ABOUT "COMPREHENSIVE" INSURANCE

Do you remember when government separated "medical costs" — when public and government considered the physician to be an individual, not a part of a "package deal" in a medical insurance plan, or a medical social effort?

Remember when industrial fees were reduced? It was during the depression, of course. This pause in national inflation promptly affected us.

The Arizona State Industrial Commission's representatives presented graphs to justify their requests for physician fee reductions. The industrial commission dollar was divided, as I remember, 75 per cent for compensation and 25 per cent for medical care. These divided into: hospital payments, sickness supply and drug payments, and payments for physicians' services. The Arizona State Industrial Commission as of the time of that request for reduction of fees showed the justness of their proposal to our satisfaction and we accepted the reduced rate.

Those graphs included the annual experience of the commission from the time of the enactment of the Arizona State Industrial law until the date of the request for reduction in industrial fees. Wouldn't we physicians like to see that depression-born graph extended to this date of the inflationary spiral, and industrial fees and fees of other programs adjusted accordingly and sharply?

The "comprehensive" insurance policy which is being received with such acclaim, considers hospital payment, sickness supply and drug payment, and the payment for physicians' services as distinct and separate items. Even percentages of payment of charges vary.

Recently an adjustment of the industrial fee

schedule has been considered. Is state government's attitude toward medicine changing as it appears in the attitude of industry, the insurance industry particularly?

The prompt and enthusiastic acceptance of

this "comprehensive" insurance by industry and public, compliments American medicine past, present, and future. It is ample proof of the popularity of medicine, "the American way."

"Comprehensive" insurance. I'll buy that.

THE STATISTICS FOR THE VOLUNTEER

By Clarence G. Salsbury, M.D.*

AS a health program of any nature progresses, whether it be on a voluntary basis or at a health department level, it becomes increasingly necessary to reappraise the activities of the program in the light of the intended results. Such a reappraisal, properly evaluated in the light of available statistics, personnel and budget, must of necessity be a prime factor in the development of future plans.

In many areas over the nation, the lack of a large number of newly reported cases of tuberculosis has led to a serious condition of complacency among volunteer and professional workers in the field. Qualified individuals more than suspect that many new cases of tuberculosis are never reported to health authorities. This is undoubtedly true in Arizona for a check of our records for any given week indicates that only one half the physicians regularly return to us the weekly cards we send asking for listing of reportable diseases.

I should like to digress for one moment to remind you that as a statistician it is my obligation to report the data as they appear to me. Whatever opinions I voice are, of course, open to your criticism and certainly we shall not agree in every instance. It is my purpose to raise questions in your minds, which, through discussion at local and state levels will aid us jointly in solving the problems of tuberculosis.

Statistically, there are two measures of the problem which we can readily examine — newly reported cases of tuberculosis and deaths in which tuberculosis is stated to be the cause. It seems logical to examine cases first since there must be a case of tuberculosis before there is a death.

During the year 1956, 1,133 new cases of tuberculosis were reported among Arizona residents. This figure is hardly comparable to data reported in other years since it does not in-

clude persons who came to Arizona for hospitalization from other states, but only those for whom residence in the state is definitely established.

Although the letter of the law provides that a report of a new case of tuberculosis must be made as soon as the diagnosis has been made, it is interesting to note that many new cases are first reported by health facilities rather than private physicians. During 1956, only one in seven new cases was first reported by a private physician. Nearly one in five was reported by the various veterans' facilities. More than one in four was first reported by a hospital. Amazingly enough, one in 16 was first reported by the death certificate itself. For those of you who want more detailed information, the following may be interesting:

Source of Report	Number of Cases	Percent of Total
Private Physicians	161	14.2
TB Sanatoriums	72	6.4
General Hospitals	168	14.8
Chest Clinics	73	6.4
Mental Hospitals and Prisons	15	1.3
Death Certificates	69	6.1
Transfers from other States	62	5.5
Indian Service Hospitals	147	13.0
All Veterans' Facilities	214	18.9
City and County Health Depts.	144	12.7
Military	8	.7

Certainly a tabulation such as this raises questions. How did a new case of tuberculosis become a matter of report by an institution unless it was so diagnosed by a physician prior to admittance? Are reports from hospitals the result of routine X-rays or have they too been diagnosed prior to admission? With more than $\frac{1}{2}$ of our tuberculosis deaths showing up as new

*Commissioner of Public Health, State of Arizona.

cases even though the death certificate indicates a long duration of the disease, why has the case not been reported previously? What is happening to the many contacts which must have been made in cases such as these latter ones? Certainly many of you can come up with even more questions than just these few.

The importance of the 1,133 newly reported cases of tuberculosis in terms of impact on the population certainly cannot be overlooked. Even if the 1,133 cases are actually all the new cases diagnosed during the year 1956, this still means that, at the prevailing rate, one Arizonan in every 915 will fall victim to this dread disease during the current year. Each of us — our family members — our friends — stands a chance to be numbered among this group.

Translating these data into comparative figures based on recent population estimates indicates the tuberculosis case rate in Arizona for the year 1956 was 110.4 cases per 100,000 population. Similar calculations at county levels indicate a variance from a high of 228.2 in Navajo County to a low of 26.0 in Greenlee County. The complete list of county rates is as follows:

	Cases	Rate Per 100,000
Arizona	1,133	110.4
Navajo	74	228.2
Coconino	64	207.9
Apache	64	190.2
Yavapai	38	167.6
Yuma	54	144.6
Pinal	77	141.8
Gila	29	122.9
Pima	276	118.3
Cochise	29	115.4
Graham	13	98.2
Maricopa	403	83.0
Mohave	4	52.7
Santa Cruz	4	50.0
Greenlee	4	26.0

Most of us agree that, in general, infectious diseases are not bound by county lines. Consequently we must look to another source to determine the reasons for the wide variance in case rate by counties. Could it be a problem of under-reporting in certain areas? Could it be related to the activities of volunteer agencies in certain areas? Are the differences related to health services available in the several areas? Are there distinct differences in characteristics

of the population at the county level which would be reflected in the tuberculosis case rates?

In relation to this latter question we must of necessity consider race and sex of those reported as new cases of tuberculosis. In 50 of the 1,133 new cases, race and sex were not stated. Of the remaining, 774 were white, 256 Indian, and 53 other races. On a percentage basis, related to the 1,083 cases in which race was stated, seven in 10 were white, nearly one in four was Indian. Relating this information to population data would seem to indicate either a much higher incidence of tuberculosis among the Indian population or an under-reporting of new cases among the white group. From a personal standpoint, it would seem that there are fairly conclusive arguments in both directions. However, we must squarely face the fact that every person residing permanently within the borders of our state must be given due consideration in public health problems as they occur. Race, creed, or color basically do not affect the chance of an infection spreading to another person.

Of the 1,083 cases in which race and sex were stated, 714, (65.9 per cent) were males and 369, 44.1 per cent) were females. In the white population the percentage of males is higher with 70.8 per cent of the 774 white total being male.

While we often have considered tuberculosis as a disease of youth, this certainly is not true. The average age of the 1,133 newly reported cases of tuberculosis for the year 1956 was 42.5 years. The average age of the white group was 45.6 years and of the Indian group 33.1 years. In both groups, males were older than females — 49.3 years and 36.8 years for white males and females respectively and 34.3 years and 31.9 years for similar Indian classifications.

In the total group only one in 10 was under 15 years of age, one in six under 21 years of age, and one in seven was 65 years old and older. Among the white male group, 17 per cent were 65 years old and older.

These few comments, it would seem, might lead us to a revaluation of reporting of new cases of tuberculosis in Arizona — a reconsideration of case-finding plans with special emphasis on plans which will include older persons in our population and set aside any complacency which may exist in our midst.

A second measure of the Arizona tuberculosis problem is an analysis of death records. During

the year 1926, 1,404 tuberculosis deaths were recorded in this state with a rate of 352.3 deaths per 100,000 estimated population. In 30 short years, within the period which all of us can remember, this figure has been reduced to 200 deaths with a death rate of 19.5 per 100,000 estimated population. The 1956 death rate of 19.5 per 100,000 estimated population makes the first time in our history that the rate is under 20 per 100,000. However, this certainly is not just cause for a decision indicating that the problem has been solved. Our state tuberculosis death rate is still the highest in the United States — more than twice the national average of approximately 8.6 per 100,000 estimated population. The final 1956 data on death are not yet complete for either Arizona or the United States, but we are close enough for all practical purposes.

The tuberculosis death rates by county range from a high of 37.8 deaths per 100,000 estimated population in Graham County to a low of zero in Santa Cruz County. The county list in rank order is as follows:

	Number of Deaths	Rate Per 100,000
Arizona	200	19.5
Graham	2	37.8
Cochise	7	27.8
Yuma	10	26.8
Apache	9	26.7
Yavapai	6	26.5
Pima	61	26.1
Navajo	8	24.7
Pinal	12	21.0
Maricopa	75	15.4
Mohave	1	13.2
Greenlee	2	13.0
Coconino	3	9.8
Gila	1	4.2
Santa Cruz	0	0.0

The wide variance in county tuberculosis case rates is similarly noted in county death rates. Here again it is difficult to understand why counties geographically close should have vastly different rates. From comparison with case rates, there seems to be little if any relationship between a high case rate and a high death rate.

One of the measures of comparison in this instance is the case fatality rate, which expresses the number of deaths per 100 cases. These rates as follows, again in rank order, show considerable variation:

CASE FATALITY RATE

	Rate Per 100 Cases
Arizona	17.7
Greenlee	50.0
Graham	38.5
Mohave	25.0
Cochise	24.1
Pima	22.1
Maricopa	18.6
Yuma	18.5
Yavapai	15.8
Pinal	15.6
Apache	14.1
Navajo	10.8
Coconino	4.7
Gila	3.5
Santa Cruz	0.0

There are those who fallaciously would lead us to believe that a high case fatality rate is a decisive indication of lower quality medical and health service. However, such is not necessarily the truth of the situation for here again the problems of under-reporting enter into the picture with considerable impact.

One final note regarding the characteristics of persons who died of tuberculosis — only 4 per cent died before reaching age 21, and 28.5 per cent were past the age of 65 years. The average age was 52.5 years.

BOOK REVIEW

1957 CURRENT THERAPY edited by Howard F. Conn, M.D. (1957) Saunders. \$11.

Once again editors of American medicine's most successful volume on treatment have collected, evaluated, and sifted thousands of therapeutic procedures for common diseases and disorders. Over 400 of the safest and most effective have gone into this 1957 volume. Make them a part of your practice.

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WORLD MEDICAL ASSOCIATION

MEMBERSHIP in the United States Committee of The World Medical Association offers the opportunity to play a direct role in the worldwide affairs of organized medicine.

In these times, when mutual understanding seems to be the only road to peace, the universal language of medicine can help mend the ills of the body politic, just as it is mending the ills of the individual.

The 500 leaders of American medicine who comprise the U. S. committee of WMA recognize that it is just as important for them to support medicine's international society as it is to be members of their county, state and national medical organizations.

WMA has formulated an international code of medical ethics and a modified Hippocratic oath defining the ideals and obligations of physicians. WMA has also set forth the basic principles that should protect the rights and status of doctors in all governmental social security schemes. And WMA has done more than give lip service to these codes and principles. It is working day and night around the world to protect the profession wherever it is threatened by political interference that would prevent the doctor from serving his patients according to his scientific knowledge and his conscience. Recently, WMA has defended the rights of the medical profession against attempts by various non-medical organizations to draft a code of international medical law.

American physicians are singularly fortunate in having met their social and economic problems by voluntary action, turning back the threat of political domination. Our favored position only emphasizes our responsibility to lead the fight to preserve the principles of good medical practice for our colleagues abroad, and to help them restore these principles wherever they have been compromised.

Doctors the world over hold the same basic ideals and cherish the same hopes for medicine. WMA has provided solidarity and strength by bringing physicians together for the solution of their common problems.

A tangible benefit of membership in the U. S. committee is the privilege of attending the annual assemblies of The World Medical Association as an official observer. The 11th

general assembly was held in Istanbul, Turkey, from Sept. 20 to Oct. 5, 1957. A large number of U. S. committee members were present, many of them combined attendance at the assembly with a tour of European centers of medical interest.

The WMA secretariat assists members of the U. S. committee in making arrangements for foreign travel, providing information on foreign medical meetings and introductions to medical leaders and teachers abroad, and promoting to the utmost the international friendships and contacts of physicians.

Membership in the U. S. committee also brings you the "World Medical Journal," published every other month by WMA. This magazine, edited by Dr. Austin Smith, (editor of *JAMA*) brings you world-wide information on medical progress and problems in the 53 countries whose national medical associations comprise the membership of WMA.

WMA is speaking for you and working for your interests in its contacts with other world organizations concerned with health or medical care, such as the World Health Organization (WHO) of the United Nations, the International Labor Organization (ILO), the International Social Security Association (ISSA) and the International Committee of the Red Cross.

Some other activities and accomplishments of WMA of interest to every American physician are:

Sponsorship of the First World Conference on Medical Education in London in 1953 and the second such conference to be held in Chicago in 1959;

Promotion of international exchanges of medical students and teachers, lecturers and clinical teaching by traveling teams of physicians;

Development of an international program to improve occupational health services;

Promotion of a freer flow of proved therapeutic agents throughout the world by urging removal of unwarranted trade restrictions and arbitrary licensing requirements in certain countries;

Promotion of medical research, by promoting national pharmacopoeias and defending the rights of individuals discovering new drugs and agents to name them;

Development of an international emblem (in

conference with the International Committee of the Red Cross and the International Committee on Military Medicine and Pharmacy) for identification and protection of medical units and civilian physicians engaged in civil defense in war time; and promulgation of regulations stating the rights and duties of such physicians;

Formulation of plans for a central repository of medical credentials, to enable qualified physicians of every country to file proof of their identity and qualifications with a safe and authoritative international source;

Conducting useful studies of many subjects of world-wide interest to physicians, such as post-graduate medical education, hospital facilities, cult practices, medical advertising, and

effects of social security legislation on medical practice.

The World Medical Association brings you solid benefits as well as the satisfaction of taking part in the international affairs of our profession. You can help make its work more effective by joining the U. S. committee. The nominal dues of active membership in the U. S. committee are only \$10 each year. The committee is seeking to double its present membership of 5,000 American physicians this year. The objectives of WMA are your objectives. It is your voice in world medical affairs. We invite you to add your name and your voice in guiding and strengthening this great organization.

**FROM PROCEEDINGS
HOUSE OF DELEGATES
AMERICAN MEDICAL ASSOCIATION
NEW YORK
JUNE 3-7, 1957**

Resolution 63. World Medical Association

THE following resolution, introduced by Dr. Percy L. Hopkins, on behalf of the Illinois State Medical Society, was adopted by the House of Delegates:

Whereas, The World Medical Association is the only international medical organization representing the practicing profession in the fields of medical economics and medical education and devoted to protection of the freedom of the practice of medicine; and

Whereas, The United States committee of WMA was organized in 1948 to enable all American physicians to render support to the objectives of The World Medical Association and help improve the status of organized medicine internationally; and

Whereas, After nine years only 5,000 U. S. physicians have become members of the U. S. committee, although both the association and the committee are engaged in projects of vital interest to every American physician; and

Whereas, The House of Delegates of the AMA at its clinical session in November 1956 declared: "It is difficult . . . to believe that any physician in the United States . . . is

not a member of the (U. S. committee) WMA . . . Further expansion of the U. S. committee will be necessary if the American viewpoint is to be continually and effectively presented by our spokesmen in The World Medical Association and, through them before other international bodies, to protect the interest and aims of medicine. . . . Surely physicians will will to share in this international effort"; therefore be it

Resolved, That the House of Delegates of the American Medical Association reiterate its support of The World Medical Association and recommend that every member of the American Medical Association join the U. S. committee of The World Medical Association; and be it further

Resolved, That the component state associations be urged to support and give official recognition to the state chairmen and subcommittees of the U. S. committee in order to achieve the objectives of The World Medical Association in protecting the freedom of medical practice and increasing the influence of the practicing medical profession at the international level.

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BROAD SOCIAL SECURITY CHANGES PROPOSED DOCTORS TO BE COVERED

MORE changes in the much-amended social security law have been proposed in a bill (H.R. 8883) introduced July 24 by Rep. Robert W. Kean of New Jersey, a Republican member of the House Ways and Means Committee before which the legislation would be heard. The bill claimed that the amendments could be financed without increasing social security tax rates. His explanation: present full employment at higher wages and increased earnings of the Social Security Trust Fund. (However, another \$600 of income would be taxed at present rate.)

One of eight major points in his bill calls for the compulsory inclusion of physicians under the system, thereby making them eligible for old age and survivors insurance at age 65 or age 50 if totally and permanently disabled.

Other proposals include: (1) Increase maximum wage base from \$4,200 to \$4,800; under present contributory rates, there would be a \$13.50 a year increase in OASI taxes for earnings of \$4,800 or more, (2) pay benefits to dependents of those receiving disability payments, (3) authorize payments from the trust fund toward rehabilitation of those now receiving disability benefits, (4) increase ultimate benefits for those who continue to work after age 65 by a 1 per cent a year delayed retirement benefit, (5) increase maximum family benefits for widows and dependent children from \$200 to \$296.25 a month, (6) increase widow's benefits from 75 per cent to 80 per cent of the worker's primary insurance amount, and (7) cover tips received as wages.

Mr. Kean said he is "very much in favor" of the coverage of physicians.

Reopening of the controversy over compulsory coverage of physicians under social security is in sight for next year, with introduction of this proposed bill to further liberalize the system.

MEDICAL, DENTAL AND ALLIED SPECIALISTS UNDER THE UNIVERSAL MILITARY TRAINING AND SERVICE ACT, AS AMENDED

AMENDMENTS to the Universal Military Training and Service Act, as amended, adopted in June 1957, replaces the former "Doctor Draft" law and provide for meeting the requirements of the armed forces for medical, dental, and allied specialists until July 1, 1959. Under the new amendments only those specialists who are otherwise liable as regular registrants are subject to induction under the Selective Service law.

The old "Doctor Draft" law under which medical, dental and allied specialists had been liable since 1950 expired July 1, 1957. It had placed liability for service on older doctors, dentists, and allied specialists, at one time up to the age of 51.

One of the principal effects of the new amendments to the basic Selective Service law is to limit liability of doctors, dentists, and allied specialists to age 35 for those deferred on or after June 19, 1951; and to age 26 for others. Public Law 85-62, which amends the basic Selective Service law with respect to these specialists, was signed by the President on June 27, 1957. By placing medical, dental, and allied specialists under the same provisions of law and regulations as other registrants with respect to the upper limit of the age of liability, the 1957 amendments relieve from liability under the Universal Military Training and Service Act, as amended, any such specialist over the age of 32 on the date the amendments became effective — July 1, 1957. This is true because in order to have acquired extended liability under the June 19, 1951 amendments, a registrant must not only have been deferred on or after that date, but also must not have attained the 26th anniversary of his birth by that date. Any man who was 26 on June 19, 1951 would, on July 1, 1957, have been 32 years old.

The amendments in addition provide that:

(1) No person in the medical, dental, and allied specialist categories shall be inducted if he applies for an appointment as a Reserve officer and is or has been rejected for such an appointment on the sole ground of physical disqualification.

(2) The President may order to active duty for not more than 24 consecutive months any member of a Reserve component who is such a specialist, who is under 35, and who has not performed at least one year of active duty in the armed forces.

(3) Any such person called or ordered to active duty from a Reserve component of the armed forces and who serves on active duty as a specialist for 12 months or more, shall upon release from active duty or within six months after release, be given an opportunity to resign the commission unless he is otherwise obligated to serve on active training and service in the armed forces or in training in a Reserve component by law or contract.

(4) Any physician or dentist qualified for a Reserve commission shall, so long as a need for his services exists, be given an opportunity to volunteer for active duty of not less than 24 months.

(5) The President may prescribe rules and regulations for the selection or induction of persons by age group or groups and for the selection and induction of persons qualified in needed medical, dental, or allied specialist categories pursuant to requisitions submitted by the Secretary of Defense.

(6) Qualified specialist aliens liable for induction shall not be held ineligible for appointment as commissioned officers solely on the grounds that such alien specialists are not citizens or have not declared their intention of becoming citizens.

(7) Any qualified person who is liable for induction, or who is ordered to active duty as

a member of a Reserve component as a physician, or dentist, or in an allied specialist category, shall be appointed, reappointed or promoted to such grade or rank as may be commensurate with his professional education, experience or ability provided that any person in a needed medical, dental, or allied specialist category who fails to qualify for, or who does not accept, a commission, or whose commission has been terminated, may be used in his professional capacity in an enlisted grade.

(8) Periods of active duty performed by such specialists in student programs prior to receipt of appropriate professional degree or in intern training shall not be counted toward establishing the qualification of such specialists for classification as a veteran exempt from liability for training and service.

(9) It is the sense of Congress that the President provide for deferment of optometry students and premedical, preosteopathic, prevertebral, preoptometry, and pre dental students in numbers at least equal to the numbers of such male students now studying in colleges and universities.

(10) Public Law 62, 85th Congress, amending the Universal Military Training and Service Act, as amended, to provide service liability for persons in medical, dental, and allied specialist categories, expires on July 1, 1959.

With the expiration of the requirement for special registration of medical, dental, and allied specialists, such specialists under the amendments of June 27, 1957, should notify their local boards within 10 days of the attainment of degrees in these fields.

Our Amazing Arizona

FAULTS OF ONE NOT FAULTS OF ALL*

By Columbus Giragi

DR. JOSEPH H. KRIS, veteran Long Island physician, deserved the condemnation heaped upon him by high medical officials, public officials and private citizens when he presented his bill in the sum of \$1,500 for administering to little Benny Hooper, who was rescued from a narrow well at the family home in Manorville, N. Y.

A medical committee poured oil on the in-

dignation created when Dr. Kris presented the bill to the parents of the little boy, and it has been announced everyone is happy with the decision that any money contributed by well-wishers, and earmarked for medical expenses, would go to the National Foundation for Infantile Paralysis.

Dr. Kris deserves all the resentment he created, but the medical profession does not deserve to be judged by his stupidity.

Screwballs who advocate socialized medicine, right here in our amazing Arizona, were quick to grab the Kris callousness and flay the entire medical profession.

* * *

THE COMMITTEE, a mediation group set up

*(Arizona Republic — Column, 6-30-57.) Reproduced by permission of author.

by the Suffolk County Medical Society, quickly handled the disgusting incident. It is a committee said to be similar to such committees elsewhere, set up to amicably settle matters when people feel their doctor bills are too high.

For almost 40 years I have had much need to use the medical profession, and honesty impels the admission that there was never any need for such a committee. On the contrary, many of the charges were too low.

I have never been confined in other than private hospitals and sanitaria and was never overcharged.

No doctor, or dentist, or hospital or sanitarium employee was overpaid, or tried to exact an exorbitant fee.

I have won quite a few arguments, and experienced no defeats or draws with patients who were as ungrateful as a dog which bit the hand that fed it. I could never refrain from castigating male and female ingrates who undertook to abuse doctors and nurses who did everything possible for them, except suffer their physical pains and mental miseries.

• • •

I HAVE HEARD FOLKS gripe about medical and hospital bills, when they had failed to pay those bills, yet managed to buy a new automobile every time a new model became available.

I have never known a doctor who did not

do some work for which he never expected to be paid — because some patients were broke.

No Dr. Kris can smear those men and women — in my humble estimation.

In northern Arizona a doctor would get out of bed at midnight, or 2 or 4 o'clock in the morning, when the thermometer registered below zero. It was too cold to start his car. He could not drive, anyway, as he was suffering from gout and was on crutches. He used his crutches to come (about a block) to my bedside when the going was really rough.

• • •

NO POLITICIAN, without exception, ever gave anyone that breed of consideration!

I would rather leave my wallet pocket unbuttoned in a group of medical men than in a group of politicians, not excluding some of those U. S. senators who justly criticized Dr. Kris.

Despite the work of the Suffolk County medical mediation committee, he did not reflect credit on the medical profession.

That profession should not be judged by Dr. Kris in this instance, nor should all politicians be judged by those who made the penitentiary.

I have been in church with some of the rudest chislers I have known, but no one accused the entire congregation of stealing chickens on the way home.

KREBIOZEN

THE AMERICAN Cancer Society is dedicated to finding, at the earliest possible date, the cause of cancer and means of preventing and curing it. It is anxious to see that every promising lead is fully, completely and fairly investigated. It also must do everything possible to prevent the public from being misled by enthusiastic exploitation of unproved methods which may lead to unnecessary loss of life if patients use these unproved methods at a time when their cancers might be cured or more successfully treated by accepted methods.

So far, only surgery and radiation are recognized by physicians as cures for cancer and then only for certain cancers diagnosed early and treated promptly. It is generally accepted that in the future chemicals, biologicals or drugs may be found which will cure cancer.

Many thousands of chemicals and biologicals

have been tested in this country's laboratories and medical schools for possible anti-cancer properties. Some few have demonstrated these properties and are now in common use by physicians throughout the country in the management of cancer. No one of these is claimed as a cure — using "cure" in its generally accepted sense of five-year survival, free of the disease.

Krebiozen, an agent whose formula is either unknown or kept secret, has been promoted by the Krebiozen Foundation of Chicago since 1951. Studies of 100 case histories of patients treated with Krebiozen by a subcommittee appointed by the Committee on Research of the American Medical Association were reported in a Journal of the American Medical Association on October 27, 1951.

This committee was composed of faculty members of medical schools located in Chicago, exclusive of the University of Illinois. The case

histories studied were obtained from seven independent sources throughout this country. The report of this committee was that the patients treated with Krebiozen failed to show objective evidence of improvement. Another committee appointed by Dr. Stoddard, the then president of the University of Illinois, headed by Dr. Warren H. Cole, head of the Department of Surgery of the University of Illinois, reviewed the records of 500 case histories of patients treated with Krebiozen. This committee reported on September 10, 1952. They also found no objective evidence that Krebiozen was effective in the treatment of cancer.

We have been informed that Krebiozen has been used by individual physicians since 1952 throughout the United States and that case histories have been assembled from reports received from these physicians in the offices of the Krebiozen Foundation in Chicago. We understand that these reports are the basis of the monograph published in 1956 by Doctors Ivy, Pick and Philips.

So far as we are aware neither the Krebiozen Foundation nor anyone associated with it has ever requested the American Cancer Society or the National Cancer Institute to make or arrange for an independent and objective review of these case histories.

Neither has the Krebiozen Foundation ever requested the American Cancer Society or the National Cancer Institute for financial support of plans for an independent and objective evaluation of this drug.

Both the National Cancer Institute and the American Cancer Society have committees of independent scientists who would carefully consider any proposal from the Krebiozen Foundation for a fair evaluation of this substance and should the Foundation ask for an independent review of the case histories referred to above, as a necessary prelude to such an evaluation, the American Cancer Society would take the initiative of setting up a competent committee to make such a study.

STUDY OF RADIOACTIVE FALLOUT VICTIMS REPORTED

THE JULY 13, 1957 issue of the *Journal of the American Medical Association* carried a report based on a two-year followup study made of 84 Marshall Islands natives who were accidentally exposed to radioactive fallout. The report showed them to be in generally good health and recovering from radiation damage. The study was made by Dr. Robert A. Conard, Brookhaven National Laboratory, Upton, N. Y., Lts. Charles E. Huggins, (MC), USNR and John B. Richards (MC), USNR, Naval Medical Research Institute, Bethesda, Maryland, Dr. Bradford Cannon, Boston, Mass., and Col. Austin Lowrey, (MC), USN, Walter Reed Army Hospital, Washington, D. C.

The study showed increasing recovery from serious blood cell damage among the exposed group. All but 15 had recovered from skin injury, the authors said.

The residual skin damage was mainly in the form of pigment aberrations. Four persons also showed scarring. Nearly all of the exposed persons had suffered some type of skin damage and loss of pigmentation. Normal pigmentation had returned in most cases at the end of one year.

While the people's white blood cell levels were still below normal, the two-year levels were not considered to be a serious condition according to the report. It also appeared that the lowered white cell levels had not lowered the resistance of the people to the disease; a chicken pox epidemic had occurred between exposed and unexposed persons without any serious complications.

One interesting finding was slight retardation in the growth and development in the exposed male children as compared with unexposed children. The authors said no significance could be attached to these slight differences because of the small number of children (nine boys) and uncertainties of racial backgrounds; however, they noted that similar retardation was found among Japanese boys surviving the Hiroshima-Nagasaki atomic bombings.

The report also said: One man died within an hour after becoming seriously ill. Autopsy showed the cause to be hypertensive heart disease with congestive heart failure — five babies born between the first and second year studies had developed normally and were free of any

apparent abnormalities. Examination of the eyes showed no radiation effects although there is still a possibility that damage may occur at a later date — radioactive analysis of bone samples taken from the man who died revealed no radia-

tion that could be definitely associated with fallout deposition in the bones. In fact, the radioactivity that was present was "well below the accepted tolerance limits" and within the range found in the bones of Americans.

INFLUENZA — 1957 A FACT SHEET*

INTRODUCTION

DURING recent weeks the eyes of the health and medical profession of this country have been on the influenza epidemic which swept through the Far East. Although thus far only sporadic outbreaks have occurred in this country, affecting roughly some 13,000 people, the important consideration is what will happen during the fall and winter months. Experts in the field say the distinct possibility of an influenza epidemic in the United States this coming winter cannot be ignored. This fact sheet generally summarizes the most important aspect of the situation as of this date.

* * *

ASIAN INFLUENZA

Influenza has been known for centuries under a variety of names but, except for the pandemic of 1918, the illness was regarded lightly.

Over the past 25 years certain strains of Type A virus and Type B virus have been the causative agents of cyclic outbreaks of influenza.

The current epidemic in the Far East and sporadic outbreaks in the United States and elsewhere are caused by a new strain of Type A virus known as the Asian strain.

There is a distinct probability that the current influenza epidemic will increase and may develop into pandemic proportions by late fall or winter. It has already touched on every continent. There is also the possibility of an increase in virulence of the at-present mild infection. (No such increase in virulence has been noted to date.)

A properly constituted vaccine containing the new strain of Type A virus has been developed. It represents the only preventive tool at our command. Six manufacturers, licensed to produce it, are working now on accelerated production schedules.

Influenza vaccines have been proved effective

and safe in controlled studies conducted by the military services.

The Public Health Service, in cooperation with the State and Territorial Health Officers Association and the American Medical Association is promoting a nationwide voluntary program of vaccination against the prevalent strain of influenza. The first 8 million cc. of the new vaccine will be available by mid-September.

There will be no priorities set at the federal level. The vaccine will be available on the open market. The cost per shot to the individual is not known at present.

Historical Aspects

Outbreaks of influenza have attracted attention for centuries. The disease has been known through the ages under a variety of names — the jolly rant, gallant's disease, "the fashionable illness" and more recently as the flu, or the virus.

Sudden appearance and widespread involvement of all ages and kinds of people have always been characteristic of the illness.

The first epidemic with origin in America was described in 1758. The usual high morbidity and low mortality features of the disease were in evidence. Asia and Europe were hit with a pandemic in 1782.

In the 19th and 20th centuries, recurrences were high-lighted by the pandemics of 1890 and 1918. The pandemic of 1918-19 which swept over nearly every continent and island of the globe, has been described as one of the great human catastrophes of all times. For the first time in the recorded history of the disease, mortality was high.

Unusual features accompanying the current epidemic of Asian influenza have reawakened interest in events just preceding the 1918-19 holocaust.

The 1918 Pandemic

In January 1916, influenza was reported to be epidemic in 22 states but was described as a mild type of illness. In December 1917, influenza

*U. S. Department of Health, Education, and Welfare Public Health Service.

was prevalent in Camp Kearny, California, and by January 1918 had reached other Army camps. It was still said to be mild. In the spring, localized outbreaks occurred in the civilian population and mortality from pneumonia rose sharply in certain cities.

Mild epidemics of influenza were reported in various localities in Western Europe in April and May of 1918 and in June and July more extensive outbreaks occurred in Great Britain and in Europe, China, India, the Philippine Islands and Brazil. In these countries, mortality rose moderately.

During August 1918 epidemics of influenza were reported in Greece, Sweden, Switzerland, Spain, the West Indies, and late in the month it appeared almost simultaneously in Camp Shelby, Mississippi, and in Boston, Massachusetts. In September, it appeared in rapid succession in other cities and Army camps along the Eastern Seaboard and the Gulf of Mexico and spread rapidly westward across the country. By October, the epidemic had involved the entire United States except for a few isolated areas.

The interval between the peaks of the epidemic in Boston and San Francisco was about four weeks, and the peaks in the number of deaths usually were reached in about one month following the beginning of the epidemic in a community or area. In some areas there was a return of the epidemic in January and February 1919. It was marked in the cities where the autumn epidemic had been less severe. Thus, the spring of 1918, an explosive outbreak with high mortality in the fall, and a third phase of recrudescence early in 1919.

In the Army over a million men were hospitalized for influenza and pneumonia, and of these there were more than 44,000 deaths. There were some 5,000 deaths among naval personnel.

It has been estimated that there were 20 million cases of influenza and pneumonia in the United States in 1918-19 with approximately 850,000 deaths. The latter figure includes deaths reported in the military.

Since 1918

In recent years mortality from all causes has not shown a marked rise during influenza epidemics and deaths attributed to influenza and pneumonia have been decreasing in numbers. The principal impact of influenza epidemics since 1940 has been seen in an excess of deaths during an epidemic from causes other than in-

fluenza and pneumonia, such as heart disease and other chronic diseases. As expected these deaths occur in the older age groups.

Little is known of the true prevalence or incidence of influenza in recent years because reporting of individual cases is unreliable. The disease cannot be clinically differentiated from other types of upper respiratory infections which may also be occurring during an epidemic of influenza, and it is not practicable to obtain laboratory diagnosis of all suspect cases. Absenteeism rates in schools, industrial, or other working groups may raise, but such indices are more useful in alerting health officers to the possibility of an influenza epidemic than in providing figures on incidence.

Since 1948, the Influenza Study Program, sponsored by the World Health Organization, has maintained a system of reporting specific diagnoses of influenza in the United States, Canada, South America and Europe. Approximately 40 collaborating laboratories are located in universities, hospitals, Public Health Service and military installations.

Etiological Aspects

The virus of human influenza was isolated in 1933 and 1934 following intranasal instillation of throat washings in ferrets, by Smith, Andrewes, and Laidlow. Since that time several strains and types of influenza virus have been isolated.

Three immunologically distinct types of influenza virus (A, B, and C) have been identified, with some four serologically intersecting groups of Type A strains.

Such viral isolations have made it possible to recognize the cyclic nature of certain strains of influenza virus as well as to chart the course of an epidemic.

In the United States during the 10 year period, 1933-43, combined clinical, epidemiologic and microbiologic studies have revealed six definite epidemics of Influenza A. In 1947, A-prime viruses completely replaced the earlier groups and the etiologic agents of Influenza A have been variants within the A-prime set during the last 10 years on a world-wide basis.

It is a new strain of A-prime virus, now termed the Asian Influenza A-virus, which is responsible for the current epidemic.

Present Epidemic

The current epidemic was first reported in Hong Kong and Singapore during the latter half

of April 1957. Then in rapid succession, epidemics occurred in Taiwan, the Philippines, the Malayan States, Japan, India and other areas.

Army medical teams in Japan investigating the early epidemics noted that the isolated virus appeared unusual in laboratory tests and sent the virus to this country for antigenic analyses. These analyses demonstrated that the virus is Type A, but is antigenically different in the hemagglutination inhibition test from any previously known Type A strain. Information to date suggests that little protection against the new virus is gained by previous vaccination with existing influenza vaccine.

Laboratory confirmation of sporadic outbreaks of Asian influenza in both the military and civilian populations have been received from a number of different areas of the United States. Beginning June 2, a series of influenza outbreaks were reported among ships which had been berthed in Narragansett Bay, Newport, Rhode Island. The means of introduction of the virus to this population could not be ascertained and spread of the epidemic was erratic. Subsequently infections with Far East strain influenza virus have been reported in San Diego, Monterey, Davis, and San Francisco, California; Cleveland, Ohio; Lexington, Kentucky; and Salt Lake City, Utah.

The highest attack rates (70 per cent) have occurred among recruits in the military services. The other large outbreaks reported in the United States have been predominantly in groups of young people living, or brought together, in environments that favor the spread of infection. The Asian strain was found at the Boy Scouts International Jamboree at Valley Forge, Pennsylvania, and among delegates attending a young people's church camp at Grinnell, Iowa. Since their return home from these meetings, reports of "respiratory and influenza-like illness" have come in from Scouts and delegates in Texas, New Mexico, South Carolina, Connecticut, Massachusetts, Missouri, Louisiana, Michigan, New York, Rhode Island, Maryland, Illinois, Indiana, Kentucky and Minnesota.

To date there has been little variation in severity of the illness and only two deaths have been reported to the United States resulting from complications of influenza.

Clinical and Public Health Aspects

The experience in Asia and in the United States since the new type of virus was intro-

duced provides no basis for predicting an increase in severity of infection in the coming fall and winter or during the next year or two. The present concern arises largely from the possibility that a more virulent variant of the Asian type may emerge. The severity of the 1918 influenza epidemic is believed to have been due to some such mutation which exposed the population to a virus or viruses with antigenic properties radically different from those strains to which they have been previously exposed.

Clinically influenza is usually characterized by abrupt onset, prostration, fever as high as 104 degrees, headache, myalgia, cough and sore throat. X-ray examinations of the chest usually show no abnormal findings. Leukopenia is common in uncomplicated cases. The febrile period usually lasts 3 to 5 days, following which the patient may complain of extreme weakness for several more days.

In laboratory diagnosis of individual cases, the virus may be isolated from secretions of the nose and throat taken early in the course of the illness. Since laboratory procedures necessary to confirm diagnosis cannot be completed in the short time the patient is still acutely ill, they are of little value to the physician in prescribing treatment. However, they are necessary to confirm the presence or absence of influenza in a community.

Even when considered mild in terms of fatality, influenza epidemics cannot be regarded as innocuous. Illnesses usually are prostrating for two or more days and are often followed by a period of lassitude and weakness. In an epidemic, medical care facilities may be temporarily overtaxed, attendance in school interrupted and the entire economy disrupted by absenteeism in all types of industry, some of them in critical areas.

Immunological Aspects

When a new variant appears whose antigenic structure is widely different from that of previously isolated viruses, a vaccine which has been satisfactory hitherto may be relatively ineffective against the new strain. This happened in 1947 when the A-prime influenza virus was identified. The same problem has confronted manufacturers of vaccine today; the introduction of the new Asian virus making a new vaccine necessary.

Influenza vaccines have been used most ex-

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DISORDERS—from the mildest
to the most severe

many patients with MILD involvement can be effectively controlled with

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many patients with MODERATELY SEVERE involvement can be effectively controlled with

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the one antirheumatic, antiarthritic that simultaneously relieves: (1) muscle spasm (2) joint inflammation (3) anxiety and tension (4) discomfort and disability.

SUPPLIED: Multiple Compressed Tablets in three formulas: 'MEPROLONE'-5—5.0 mg. prednisolone, 400 mg. meprobamate and 200 mg. dried aluminum hydroxide gel. 'MEPROLONE'-2—2.0 mg. prednisolone, 200 mg. meprobamate and 200 mg. dried aluminum hydroxide gel. 'MEPROLONE'-I supplies 1.0 mg. prednisolone in the same formula as 'MEPROLONE'-2.



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tensively in special population groups such as military personnel, schools and certain employee groups. Studies in the military reveal that a properly constituted vaccine is 70 per cent effective under epidemic or endemic conditions and that reactions to the vaccine are quite rare. Individuals known to be sensitive to egg are not given the vaccine since virus is grown in embryonated eggs.

In recent years the nature of influenza in this country has not warranted the use of influenza vaccine except on a group basis to minimize absenteeism or in so called priority groups. However, the present influenza epidemic, with its rapidity of spread and high attack rate is sufficiently unusual to press for immunization against the new strain of influenza virus. As a

properly constituted vaccine is the only preventive for this disease, the Public Health Service, with the Association of State and Territorial Health Officers and the American Medical Association, plans to promote the use of the vaccine as soon as it becomes available.

For the first time in history we are in the fortunate position of being ahead of an impending epidemic of influenza. On the basis of past experience it seems probable that influenza will continue to spread but will not be highly epidemic in this country until fall or winter when outbreaks may be anticipated. Even though this is still only a possibility, any preparations which need to be made to meet it must be accomplished now. After a pandemic starts, it will be too late.

WHAT MAKES BLUE SHIELD DIFFERENT?

ONE FREQUENTLY hears doctors ask, "Isn't Blue Shield just 'another insurance company'?" This question usually comes from a member of the generation of new doctors who have come into practice since the early '40s, and who know little of the desperate challenge that gave rise to the Blue Shield idea and the hard work with which its accoucheurs gave it birth.

Blue Shield represents a vast and triumphant effort on the part of American medicine to prove to the people of the United States that, with their help, their doctors can solve urgent problems of medical economics without governmental interference or dictation. Blue Shield was created at a time when the insurance industry questioned the actuarial feasibility of voluntary medical care insurance on any large scale, and even many doctors feared that a voluntary program would inevitably lead to a compulsory health insurance system under government auspices.

Blue Shield has little in common with commercial accident and health insurance beyond the fact that it utilizes actuarial principles. Where the insurance company underwrites selected groups to produce a profit, Blue Shield, reflecting the service ideas of the medical profession, makes its services available to the entire community, at rates based on the needs and experience of the community — including most particularly those people in the low income groups who most need medical prepayment protection.

Where commercial insurance companies offer cash allowances which may or may not have any relation to the doctor's normal charge for his services, Blue Shield's schedules of payment are negotiated and approved by the local medical profession. In most areas, Blue Shield benefits take the form of fully paid professional services, through the cooperation of the "participating physicians." Even where "service benefits" are not provided by formal agreement of the doctors, Plan schedules generally attempt to approximate the normal charges of the local physicians for services rendered people in the lower income brackets, and the local physicians frequently accept these fees as full payment.

Blue Shield Plans are distinguished by non-profit operation, which means that their only purpose is service to the people and their doctors. Non-profit operation also means that all the funds contributed by the subscribers are available for payment of benefits, with a minimum retained for actual operating costs and reserves for future claims.

Over and above all requirements of state law, Blue Shield Plans are required to maintain strict "membership standards" in order to use the name and symbol "Blue Shield." These standards provide that the Plan must have the continuous approval of the local medical society; must render an annual report to the society; and must secure the formal participation of at least 51 per cent of all the physicians in the Plan area.

Blue Shield utilizes insurance principles, but, because of the participation of the great majority of American physicians, it is able to trans-

cend the limits of insurance — to become a true community service on behalf of America's physicians.

COURT RULING SAID TO PROTECT REDUCING PILL ADVERTISING

TWO GOVERNMENT regulating agencies would like to be more active against exaggerated claims for weight-reducing pills, but they are restrained by federal court decisions favoring the manufacturers. This was the gist of testimony presented by the heads of Food and Drug Administration and Federal Trade Commission to a House subcommittee that is investigating the situation. Earlier, medical witnesses had told the committee that the pills cannot in themselves bring about loss of weight, and that some of them may present a health hazard to certain persons.

FDA is authorized to act against foods or drugs that are "misbranded," by carrying false claims or other untruths either on their labels or on accompanying literature. FDA Commissioner George P. Lerrick said that 13 years ago successful action was taken against a weight-reducing product that had harmful ingredients, and that now "the dangerous type of reducing preparation has all but disappeared completely from the scene."

However, the government was not so successful when it moved against manufacturers charged with exaggerating the weight-reducing

capabilities of a candy that contained vitamins. The judge ruled the advertising claims were not unduly exaggerated, as consumption of candy before a meal naturally would cause some loss of appetite. As a consequence, Mr. Lerrick said, FDA has been forced to conclude that "regulatory action in this field must be very carefully selected and that it would not be feasible to bring cases where the labeling claims were qualified . . ." However, the agency is preparing one action against a weight-reducing product.

Federal Trade Commission can act against any false or misleading advertising (broader than FDA's power). FTC Chairman Sigurd Anderson explained, however, that the decisions cited handicapped his agency's policing. He commented: "Our regulation of the products sold as appetite depressants . . . has been limited largely to claims implying that the product itself has an effect on metabolism, claims of weight loss in definite and predetermined amounts, or special claims such as official government approval of the product." He also complained to the subcommittee that congress had turned down an FTC request for \$33,500 extra for scientific investigations and testing.

The subcommittee does not plan to make any recommendations for remedial legislation this session of congress, but might offer a bill after congress reconvenes in January.

AEC PUBLISHES HANDBOOK ON WEAPONS EFFECTS

THE U. S. Atomic Energy Commission has announced publication of a 579 page handbook providing the latest knowledge of weapons effects.

The handbook entitled "The Effects of Nuclear Weapons" was prepared by the Armed Forces Special Weapons Project of the Department of Defense at the request of the Atomic Energy Commission and with the Commission's assistance. The book includes the results of observations and experiment in laboratory work in nuclear test detonations since 1950.

This book is on sale for \$2 per copy by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

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**BOARD OF MEDICAL EXAMINERS
STATE OF ARIZONA**

826 Security Building
Phoenix, Arizona

The Board of Medical Examiners of the State of Arizona at a regular meeting held Saturday, July 20, 1957, issued certificates to practice medicine and surgery in this state to the following doctors of medicine:

Alway, James D., Jr. — 1332 North 2nd. Street, Phoenix, Arizona

Comess, Morton S. — 800 North First Avenue, Phoenix, Arizona

Crisp, William E. — Ohio State University Hosp., Columbus, Ohio

Davis, Charles E. — St. Joseph's Hospital, Phoenix, Arizona

DeLozier, Joseph B. — 5410 S. Central Ave., Phoenix, Arizona

DeVries, Paul H. — 116 N. Tucson Blvd., Tucson, Arizona

Dunn, William J. — 1009 W. Green Street, Champaign, Illinois

Ebersole, Carl M. — 2435 E. Adams St., Tucson, Arizona

Gambacorta, Otto — 130 S. Scott Ave., Tucson, Arizona

Gibson, Richard W. — 433 West Osborn, Phoenix, Arizona

Gilbert, David B. — Payson Clinic, Payson, Arizona

Grossman, Samuel N. — 9730 Wilshire Blvd., Beverly Hills, Calif.

Haddock, Douglass A. — 5700 Pontiac Trail, Orchard Lake, Michigan

Harmon, Lewis G. — 4251 Gregory Rd., Gregory, Herman, Jack J. — 2021 North Central Ave., Phoenix, Arizona

Hunter, Willard Smith — St. Joseph's Hospital, Phoenix, Arizona

Jensen, Ralph — Route No. 1, Box 431, Shelbyville, Tenn.

Johnston, Howard H. — Miami-Inspiration Clinic, Miami, Arizona

Kavan, Lucien C. — John Sealy Hosp., Galveston, Texas

Kavanagh, Thomas W. — 2021 North Central Ave., Phoenix, Arizona

Keeling, Robert F. — New Cornelia Hospital, Ajo, Arizona

Kliwer, Paul W. — Wickenburg, Arizona

Lovekin, William S. — Sage Memorial Hosp., Ganado, Arizona

MacDonald, Donald C. — 1143 Webster, Birmingham, Michigan

McGovern, Richard E. — St. Joseph's Hospital, Phoenix, Arizona

McGregor, John G. — P. O. Box 82, Fort Sam Houston, Texas

Nichols, Dean — Good Samaritan Hospital, Phoenix, Arizona

Peterson, Rexford A. — 340 E. Eleventh St., Durango, Colorado

Schmidt, Charles D. — 84 East 7500 South, Midvale, Utah

Sechrist, Gilbert L. — 1301 North Beaver Flagstaff, Arizona

Shaw, Wayne R. — 417 South Dixie, Eastland, Texas

Thayer, Robert H. — 228 Leavell Dr. Van Horne, Park, Fort Bliss, Texas

Underwood, George M. — 1221 W. Hazelwood St., Phoenix, Arizona

Watson, John B. — 6253 Hollywood Blvd., Hollywood 28, Calif.

**September 1, 1957 Progress Report
from the Poison Control Information
Center at the University of Arizona
College of Pharmacy**

THE POISON Control File Advisory Committee has met twice to approve the poison file cards for duplication. The entire file will be duplicated and distributed to the participating hospitals throughout the state as quickly as the remaining cards are approved by the Poison Control Committee of the Arizona Medical Association.

Since the August 1 report, 29 poisoning cases have been received at the poison control center. The statistics of the reports in rounded figures are as follows:

AGE:

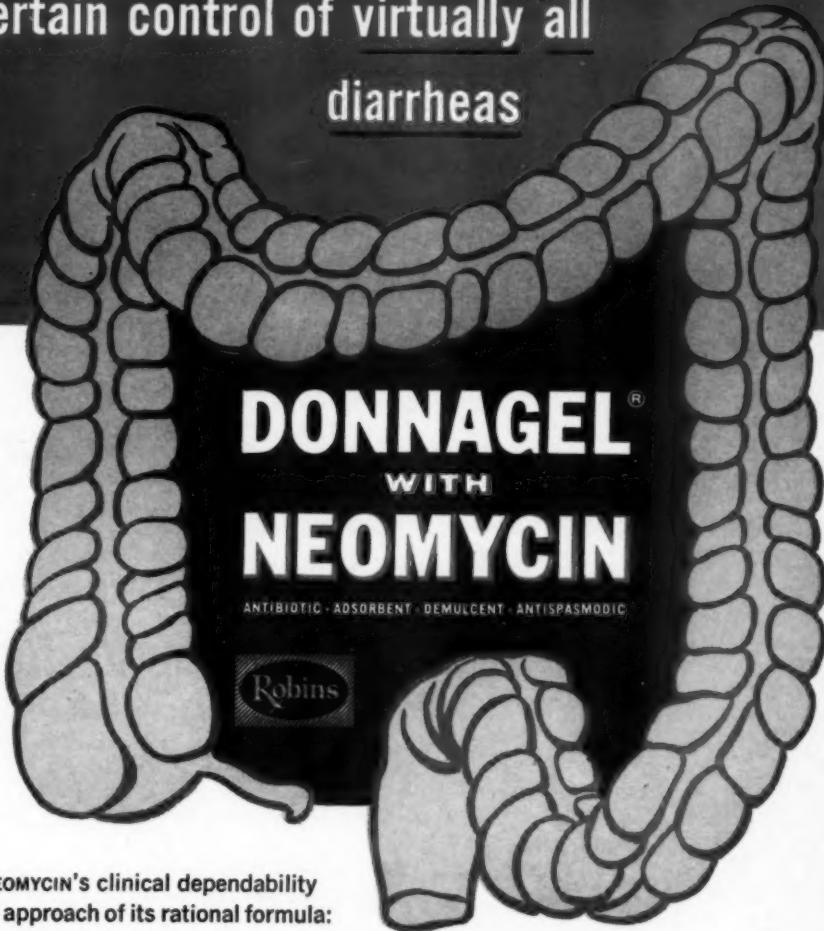
59 per cent involved under 5 year group
14 per cent involved 6 to 15 year age group
18 per cent involved 16 to 50 year age group
3 per cent involved 31 to 45 year age group
3 per cent involved over 45 year age group

NATURE OF INCIDENT:

83 per cent accidental
17 per cent intentional

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preparation
you've
asked
for

**ANNOUNCING: a NEW antidiarrheal for
more certain control of virtually all
diarrheas**



Addition of neomycin to the effective DONNAGEL formula assures even more certain control of most of the common forms of diarrhea.

Neomycin is an ideal antibiotic for enteric use: it is effectively bacteriostatic against neomycin-susceptible pathogens; and it is relatively non-absorbable.

The secret of DONNAGEL WITH NEOMYCIN's clinical dependability lies in the comprehensive approach of its rational formula:

COMPONENT	ACTION	BENEFIT
Neomycin base, 210.0 mg. (as neomycin sulfate, 300 mg.)	antibiotic	Affords effective intestinal bacteriostasis.
Kaolin (6.0 Gm.)	adsorbent, demulcent	binds toxic and irritating substances. Provides protective coating for irritated intestinal mucosa.
Pectin (142.8 mg.)	protective, demulcent	Supplements action of kaolin as an intestinal detoxifying and demulcent agent.
Dihydroxyaluminum aminoacetate (0.25 Gm.)	antacid, demulcent	Enhances demulcent and detoxifying action of the kaolin-pectin suspension.
Natural belladonna alkaloids: hyoscyamine sulfate (0.1037 mg.) atropine sulfate (0.0194 mg.) hyoscine hydrobromide (0.0065 mg.)	anti-spasmodic	Relieves intestinal hypermotility and hypertonicity.
Phenobarbital (1/4 gr.)	sedative	Diminishes nervousness, stress and apprehension.

Robins

Informational
literature
available
upon request.

INDICATIONS: DONNAGEL WITH NEOMYCIN is specifically indicated in diarrheas or dysentery caused by neomycin-susceptible organisms; in diarrheas not yet proven to be of bacterial origin, prior to definitive diagnosis. Also useful in enteritis, even though diarrhea may not be present.

SUPPLIED: Bottles of 6 fl. oz. At all prescription pharmacies.

DOSAGE: Adults: 1 to 2 tablespoonfuls (15 to 30 cc.) every 4 hours. Children over 1 year: 1 to 2 teaspoonfuls every 4 hours. Children under 1 year: 1/2 to 1 teaspoonful every 4 hours.

ALSO AVAILABLE: DONNAGEL, the original formula, for use when an antibiotic is not indicated.

OUTCOME:

100 per cent recovery

TIME OF DAY:

27 per cent occurred between 6 a.m. and noon
 35 per cent occurred between noon and 6 p.m.
 35 per cent occurred between 6 p.m. and
 midnight
 3 per cent occurred between midnight and
 6 a.m. (a scorpion sting at 5:30 a.m.)

CAUSATIVE AGENT:

31 per cent aspirin preparations
 14 per cent solvents — paint thinner, charcoal
 lighter, cleaning fluids
 7 per cent each for scorpion stings, insecti-
 cides, and antihistamines.
 3 per cent each for dog bites, black widow
 spiders, liniment, diuretic tablets, iron
 tablets, toadstools, laundry rinse, sedatives,
 chlorine inhalations, and unknown agents

Future Meetings

SIXTH ANNUAL ARIZONA CANCER SEMINAR

THE ARIZONA Division of the American Cancer Society, in collaboration with the Arizona Medical Association, will again be host at one of the country's outstanding Cancer Seminars when it meets in Tucson, Arizona, January 25, 26 and 27, 1958, at the Tucson-Bagdad Inn.

Under the chairmanship of Darwin A. Neubauer, M.D. of Tucson and his committee of seven physicians: Arthur A. Present, Hermann S. Rhu, Jr., Ralph Fuller, James Fritz of Tucson and Edward Bregman and James Barger of Phoenix, the faculty for the Seminar has been completed.

The three-day meeting will include lectures by men who top their particular fields in the area of cancer. These specialists are: Dr. Arthur Purdy Scott, pathologist of New York City, Dr. Ross Golden, radiologist of Los Angeles, Dr. Axel Arneson, gynecologist of St. Louis, Dr. Ian MacDonald, surgeon of Los Angeles, Dr. Barrett Brown, plastic surgeon of St. Louis, Dr. Cornelius Lehman, dermatologist of San Antonio, Mr. Dale Trout, physicist of General Electric Co., Milwaukee and the new medical and research director of the American Cancer Society, Dr. Harold S. Diehl.

Their subjects will be reported in a later issue, as well as the names of those who will moderate the sessions. There will be a luncheon and round table discussion on the 25th and the 26th.

It is hoped that more than 500 physicians from Arizona will attend and it will be possible for

everyone to stay at the Tucson Inn for the sessions.

Please enter these dates on your calendar.

EUROPEAN FEDERATION OF INTERNATIONAL COLLEGE OF SURGEONS TO MEET IN VIENNA AND BRUSSELS

TWO MEETINGS of the newly formed European Federation, International College of Surgeons, were announced. One will be held in Vienna, October 18-20, and the other during the World's Fair in Brussels, May 15-18, 1958.

The Vienna Congress will be under the auspices of the Vienna Section, I.C.S., and the direction of Prof. Felix Mandl and Prof. Dr. Leopold Schonbauer, both of the surgical department, University of Vienna. The meeting will bring together the German, Austrian, Dutch, Swiss and other Sections. About 75 papers will be presented. Sessions will be held in Billroth-Haus, Vienna.

Nine surgeons will participate in a symposium on "Surgery of Athletic Injuries," in connection with a special Section on that subject established within the framework of the European Federation.

Scientific themes will include "Diseases of Connective Tissues," "Modern Therapy of Malignancies," "Errors in Diagnosis and Therapy," "Bone Tumors," and "Contrast Visualizations of Internal Organs, Their Value and Dangers."

The entertainment program will include a reception in City Hall by the Mayor of Vienna, his Excellency, Franz Jonas; a visit to the opera,

luncheon and tours. Inquiries about scientific matters should be addressed to Dr. Felix Mandl, Reichsratsstrasse 11, Vienna I.

The Brussels Congress will bring together the Austrian, Belgian, English, Finnish, French, German, Greek, Italian, Dutch, Spanish, Swiss and Turkish Sections of the I.C.S. The meeting will be under the auspices of the Belgian Section and the direction of Prof. John Henri Oltramare of the University of Geneva and director of the European Federation, and Drs. Leopold Lambert, André Sondervost and G. F. Van Keerbergen, president, secretary and vice president, respectively, of the Belgian Section.

Details may be had by writing to the Secretariat, International College of Surgeons, 1516 Lake Shore Drive, Chicago 10, Illinois.

SOUTHWESTERN SURGICAL CONGRESS

THE TENTH annual meeting of the Southwestern Surgical Congress will be held at the *Shamrock Hotel, Houston, Texas*, on the dates of March 31, April 1, and April 2, of 1958.

12th General Assembly— Copenhagen — August 15-20, 1958

IT IS NONE too early to reserve August 15-20, 1958 and plan to attend the 12th General Assembly of The World Medical Association in Copenhagen, Denmark. Special tours will be planned.

PROGRAM ON NORMAL AND ABNORMAL ASPECTS OF THE SKIN TO BE FEATURED AT A.A.A.S. MEETING

THE COMMITTEE on Cosmetics of the American Medical Association in co-sponsorship with the Society for Investigating Dermatology will present a two day symposium entitled "The Human Integument — Normal and Abnormal." This program has been arranged at the invitation of the American Association for the Advancement of Science and will be presented before the Medical Sciences Section at the Association's 124th annual meeting in Indianapolis, Indiana on December 28 and 29, 1957.

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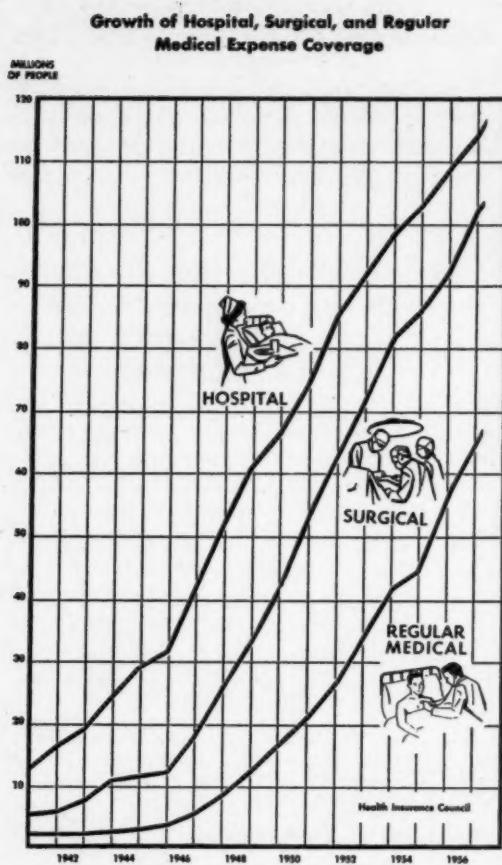
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**ARMY ANNOUNCES COURSES FOR
"MANAGEMENT OF MASS
CASUALTIES"**

THE ARMY has announced that courses for the "Management of Mass Casualties" to be conducted during fiscal year 1958 have been scheduled for the following dates: December 2-7, 1957, March 24-29, 1958, and May 12-17, 1958.

The AMA Council on National Defense has been allotted a quota of two representatives for each course. Physicians interested in attending the course should write directly to the Council on National Defense, American Medical Association, 535 N. Dearborn St., Chicago 10, Illinois, advising which course is desired. Since spaces for these courses are limited, requests will be handled on a first come first served basis.

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Broad Social Security Changes Proposed; Doctors Would Be Covered

MORE changes in the much-amended social security law have been proposed in a bill (HR 8883) introduced July 24 by Rep. Robert W. Kean of New Jersey, a Republican member of the House Ways and Means Committee before which the legislation would be heard. The bill is not an administration measure. Mr. Kean claimed that the amendments could be financed without increasing social security tax rates. His explanation: present full employment at higher wages and increased earnings of the social security trust fund. (However, another \$600 of income would be taxed at present rate.)

One of eight major points in his bill calls for the compulsory inclusion of physicians under the system, thereby making them eligible for old age and survivors insurance at age 65 or age 50 if totally and permanently disabled.

Other proposals include: (1) Increase maximum wage base from \$4,200 to \$4,800; under present contributory rates, there would be a \$13.50 a year increase in OASI taxes for earnings of \$4,800 or more, (2) pay benefits to dependents of those receiving disability payments, (3) authorize payments from the trust fund toward rehabilitation of those now receiving disability benefits, (4) increase ultimate benefits for those who continue to work after age 65 by a 1 per cent a year delayed retirement benefit, (5) increase maximum family benefits for widows and dependent children from \$200 to \$296.25 a month, (6) increase widow's benefits from 75 per cent to 80 per cent of the workers' primary insurance amount, and (7) cover tips received as wages.

Mr. Kean said he is "very much in favor" of the coverage of physicians.

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QUACKERY

USE of the mails to promote medical quackery is at the highest level in history, Postmaster General Arthur E. Summerfield said in a statement issued a few days ago.

Based on reports from Chief Inspector David H. Stephens, medical frauds today are more lucrative than any other criminal activity.

"People in all walks of life are paying big money for these frauds," Mr. Summerfield said. He estimated that the medical fraud cases now pending represent an annual loss to the public of \$50 million.

In the past 12 months, 46 fraud orders have been issued in medical fraud cases.

"However," Mr. Summerfield said, "rather than attempt to defend the indefensible, 106 persons or firms signed stipulations agreeing to discontinue their questionable enterprise. These phony schemes altogether were known to be taking in at least \$225,000 a day. Is it any wonder that new frauds spring up every day?"

Medical frauds most common today, in order of popularity, are "dietless" reducing schemes, and "sure cures" for cancer, arthritis, skin trouble, baldness, and "lost manhood." Bust development gimmicks are also on the best-seller lists.

The latest in "cancer cure" devices is supposed to contain "atomic" material.

Mr. Summerfield urged citizens to report suspected mail frauds to the post office department for prompt investigation.

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RECENT PUBLICATIONS

Civil Defense

YOUR attention is invited to the following pertinent items in connection with civil defense:

- (a) "Atomic Tests in Nevada," U. S. Atomic Energy Commission, 1957.
- (b) "Defense Against Radioactive Fallout on the Farm," U. S. Department of Agriculture, 1957.
- (c) "Emergency Medical, Hospital, and Nursing Care," by Harold C. Lueth, M.D., The Annals of the American Academy of Political and Social Science, Vol. 309, January, 1957.
- (d) "Survival in Public Shelters," (A paper based on a technical study of hypothetical nuclear attack on the metropolitan area of St. Louis.) Federal Civil Defense Administration, 1957.
- (e) "Nursing During Disaster — A Guide for Instructors," Second Edition, National League for Nursing, 1957.
- (f) "Civil Defense and Vocational Education," American Vocational Association, Inc., 1010 Vermont Ave., N.W., Washington 5, D. C.

AMERICAN CANCER SOCIETY

THE AMERICAN Cancer Society announced the appointment, effective November 1, 1957, of Dr. Harold S. Diehl, Dean of the College of Medical Sciences, University of Minnesota, as Senior Vice President for Research and Medical Affairs and Deputy Executive Vice President.

The appointment was viewed as an important contribution to a "speeded up" offensive against cancer, according to Dr. David A. Wood, ACS President.

AMA URGES ALL PHYSICIANS TO JOIN U.S. COMMITTEE

THE House of Delegates of the American Medical Association, on June 5, unanimously adopted a resolution urging all members of the AMA to become members of the U. S. Committee of WMA and asking each state society to give special aid to the U. S. committee chairman in its state. Every doctor should be indoctrinated that his basic membership in organized medicine is not complete until he belongs to the United States Committee of The World Medical Association — as well as to his county, state and national medical societies.



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Woman's Auxiliary

SUPPORT CIVIL DEFENSE IT MAY SAVE YOUR FAMILY

By Willa R. Kennedy*

INTRODUCTION

IN REGARD to Civil Defense, the people of this country can be categorized in the following manner:

1. Optimist. He says, "All is for the best. They won't let it happen here."
2. Religious fanatic. He says, "Let God's will be done."
3. Fatalist. He says, "It won't harm me until my number is up."
4. Neurotic. He goes out and commits suicide to keep from being killed.
5. Sensible ones. They try to learn all about the problem so that they may help others as well as themselves.
6. Others. They say, "It is too awful to contemplate so I just won't think about it."

All of us fit into one of these categories. All of us are afraid of dying, at least 99 per cent of the people are and the other one is a liar.

In the field of mass casualties caused by atomic or thermonuclear attack, there are no experts and it must be borne clearly in mind that all who speak or write on this subject base their comments and judgments on analogy with civilian disasters or combat surgery. In this new field, none of us can speak from experience, and it is too easy for false leaders to arise and cloud the issue. In a subject as complicated and serious as that dealing with mass casualties it is especially necessary to define our terms, speak accurately, avoid emotionalism, calm the evangelists, reassure the defeatists, silence the crackpots, stir up interest in the lethargic and do all in our power to arrive at a proper estimate of the probable situation and make adequate, flexible plans on such a basis.(1)

As you know, there are two kinds of bombs, the atomic bomb that is measured in thousands of tons of TNT, and the hydrogen bomb that is measured in millions of tons of TNT. It is

now possible to launch them by intercontinental missile and pinpoint them on any target area in the world.

It was clearly demonstrated in World War II that to defeat an enemy you had to destroy his facilities for waging war. Our air force generals admit that seven out of every 10 enemy planes could easily penetrate our defenses and drop bombs on any target areas they desire. Needless to say, these will not necessarily be military ones. These targets will be hit simultaneously and they estimate, as the result of one attack, we will have between 30 to 50 million casualties.

BOMB PHENOMENA(2)

First you have the blast effects and the shock wave. The shock wave travels with a speed greater than sound. The energy in the shock wave decreases as the distance away from the bursting point increases. When the wave is reflected from any source, such as going up mountains and in valleys, the intensity is increased, but going down the other side of the mountain, it decreases.

Next is the heat. A wide spectrum of electromagnetic radiation is emitted upon detonation. The heat at the center of the bomb is over a million degrees Fahrenheit. Observers feel the heat the instant they see the fire ball.

The nuclear radiation consists of the prompt and the residual. At the instant of detonation, prompt radiation effects are emitted all with characteristic half lives. Residual radiation is the result of many fissions at the time of the explosion. These react with other particles and continue to emit radioactive material. The entire mixture follows a decay pattern inversely proportional to time. For each seven-fold increase in time, there is a 10-fold decrease in radiation. For example, at detonation and a short time afterward, the amount of radiation might be 1000 r per hour. It is estimated that 350 r to 400 r are a lethal dose for human beings.

*Chairman, Woman's Auxiliary Civil Defense Comm.

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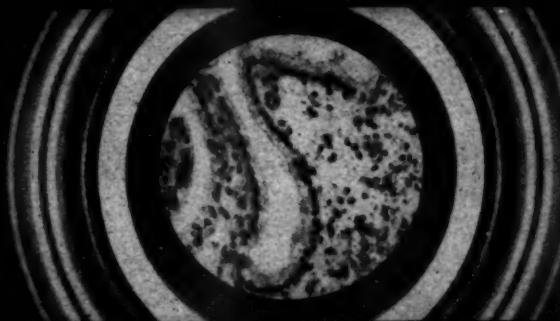
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Due to the short half life of some of the fission products, their radiation rate drops rapidly. If you were in a well constructed shelter, you would receive only 1/10 of the amount of radiation on the outside and you could safely walk out after two weeks or a month, depending on the size of the bomb, type of burst and climatic conditions.

Our hydrogen bomb that was dropped on the Bikini Atoll was a 25 megaton bomb. It was dropped from an altitude of three miles and was a surface burst. The crater it created was large enough to put five Pentagon buildings into. The entire atoll disappeared. The fallout fell on 64 American soldiers on an adjacent atoll and 200 Marshellese on three other atolls. This was due to a shift in the wind. They did not receive a lethal dose but enough to give them severe radiation burns. All residents on these atolls had to be evacuated. They received from 75 r to 200 r.

Nuclear radiation fallout can mean anything out to a few miles to several hundred or even thousands. It depends on the size of the bomb and the wind direction and velocity. To settle out it may take from 48, to 72 hours, months or even years.

Radiation is always destructive! It cannot be detected by any of the five senses. You can't see, hear, smell, feel or touch it. It can only be detected by some instrument for measuring its intensity or presence. Treatment of radiation casualties will not be based on instrument readings, but only when their symptoms appear.

Thermal radiation is unidirectional in character. It can be roughly compared to the sun only far more intense. Following detonation, injury is sustained in that few seconds 0.3 to 3. Flash burns appear only on the surface of the skin exposed to the radiation source. Anything that will cast a shadow will protect from flash burns. Persons near ground zero will be vaporized or charred as was the lot of many in the Japanese cities.

To give you an idea of the intensity of atomic bombs, here is what happened in the two Japanese cities. The combined populations of Nagasaki and Hiroshima were 500,000. Using two "normal A bombs," or the equivalent of 40,000 tons of TNT, it not only ended the war, but it caused 219,000 casualties. Of the injured, 112,000

died. 90 per cent of all doctors in Hiroshima were casualties. 75 per cent of the students at the Nagasaki Medical College were killed. Out of the 45 hospitals, only three were tenable. No survivors were found out of a military installation of 20,000 men; 138,000 people needed immediate medical attention; 15,000 were listed as missing, probably vaporized or cremated.

This was an unwarmed, untrained population for an atomic attack. We have an untrained population and who can say we will have warning?

With respect to major disasters, the people of our nation are oriented outwardly. We tend to look to outsiders for rescue and aid. We must change this to an inward orientation. We cannot expect help from the outside for they will have their own problems. There is no assurance that we are going to have communications or transportation facilities. You will have to carry on in your own area as if no outside help is forthcoming. It will be up to each individual to prepare for his own safety, and the members of their families. This means that every man, woman and child will have to be trained and know what to do for their own protection, and in essence, be their own doctor. No medical help will be available for at least 72 hours.

SURVIVAL AID

Survival aid is mandatory for everyone under the compelling requirements of effective manpower in nuclear warfare which imposes a state of allout war and allout manpower mobilization. This consists of five things:

1. Know how to apply wound dressings.
2. Arrest bleeding.
3. How to handle patients.
4. Different types of artificial respiration and how to maintain patent airways.
5. Emergency splinting.

Treatment of radiation casualties will be purely symptomatic. No specific therapy exists. There may be other injuries in addition to the radiation ones and these would be treated the same way as any other casualty. There is no accurate method so that the doctor will have to judge his treatment according to symptoms.(3) The only protection from radiation is by shielding. A good underground shelter with 18 inches of cement and 3 feet of dirt on top is adequate

protection from radiation and barring a direct hit, it will also protect from the heat, blast and shock wave.

If you live in the metropolitan area where the most likely target area would be, if you have any warning, you should plan to get out. You may not be warned. You must have an alternate plan. A shelter you can get into in three minutes. This should be stocked with food, water, sanitary and medical supplies to last for two weeks or a month. You should have a radio to keep in contact with rescue parties. Due to the lack of public training, if we do get a warning, there is going to be panic. The streets and roads are going to be blocked with old cars and pedestrians. Accidents will occur, cars will run out of gas and the roads will become death traps. You may be going directly to the area where the fallout is intense. There is no accurate method to determine the fallout pattern.

Waste disposal will be an enormous problem. If we pile human waste and people close together we increase tremendously our problems in disease control. Be wise and immunize! The problem of immunization is a great one. Due to lack of refrigeration facilities, vaccines will

not be available. There should be a national law requiring everyone to maintain their immunizations.

SUMMARY

These are only a few of the problems of thermonuclear warfare. Unfortunately, there is no current mechanism whereby any individual or group can exert any pressure to get Civil Defense rolling. If a city doesn't have the urge to prepare, it simply ignores the problem. If anything is to be our undoing, it will be the disinclination to appoint responsible leaders and follow their directions. We must have a pre-planned organization. Such an organization is familiar to the military, but is revolting to civilians who proudly rebel at "regimentation" or interference with their "freedom of action." Without organization they will be free to die and that is about all.(3)

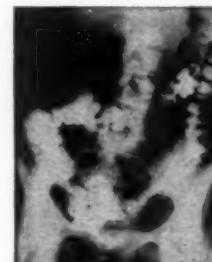
If we preplan for the optimum, perhaps the minimum may be attained.

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1. Bowers, Warner F., Symposium on Class I, Management of Mass Casualties Course, Brooke Army FSS, 1956, Page 117.
2. Maupin, Clinton S., Symposium on Class I, Management of Mass Casualties Course, Brooke Army FSS, 1956, Page 3.
3. Goldstein, Joseph F., Symposium on Class I, Management of Mass Casualties Course, Brooke Army FSS, 1956, Page 93.

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